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See page 41

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See page 54

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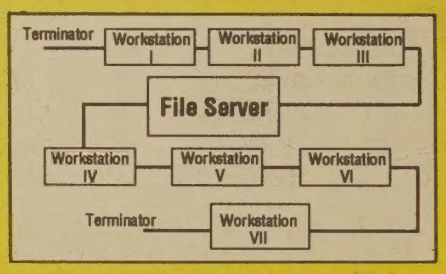

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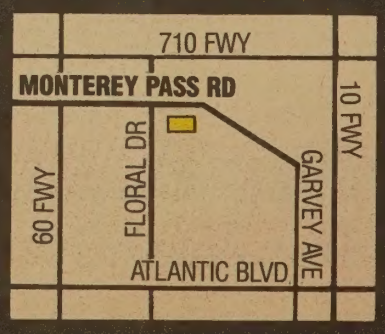

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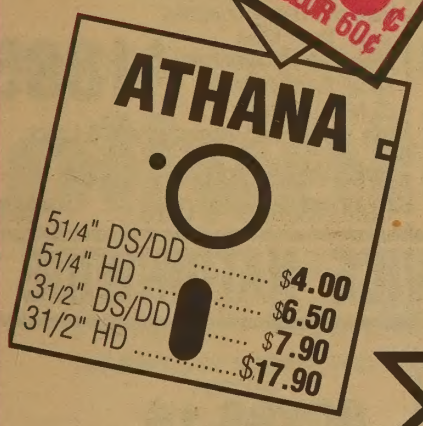

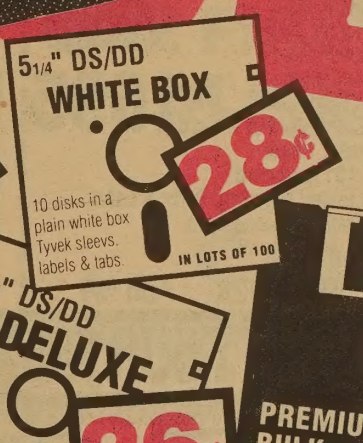

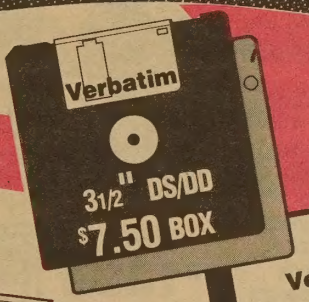

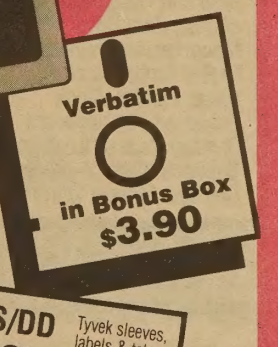

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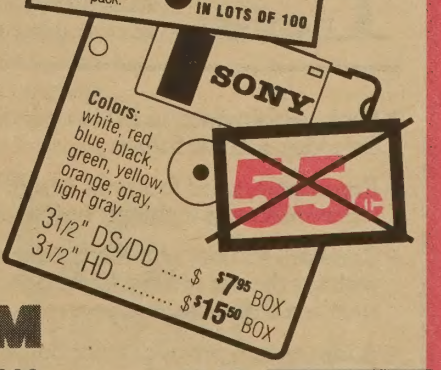

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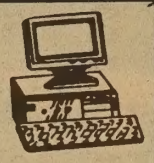

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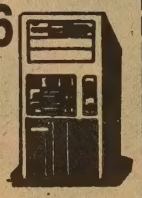

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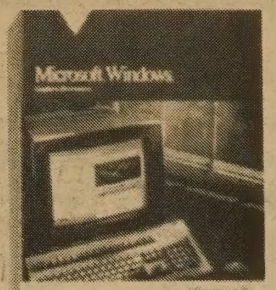

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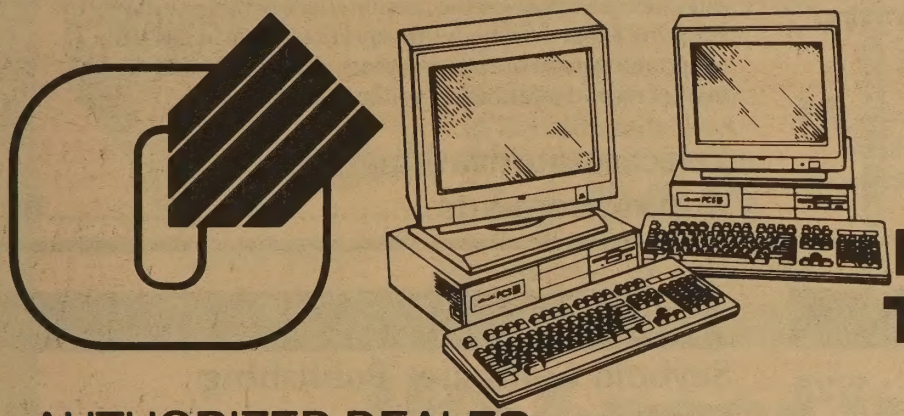

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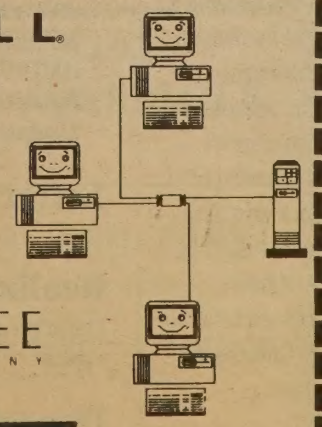

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SEPT. 17, 1990 ISSUE #74
MICROTIMES™

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A NOTE FROM THE EDITORS:

In ways Alexander Graham Bell probably never envisioned, the telephone and the computer have created opportunities for people to communicate with each other and find the information they need in ways that simply overcome the barriers of time and space. With a computer and a modem, you can talk to people around the world about issues and business, support your customers, market your products, and generally do a lot of what you do in the physical world more efficiently.

This month we look at several resources for online communication, from the information-rich and user-hostile Usenet to the friendlier and considerably less rarefied realms of Prodigy and America Online. We also examine the recent boom in audiotex, in which the voice phone has become a powerful marketing and information tool. The section starts on page 41.

And speaking of inventors who'd be amazed at the results of their creations, picture Johann Gutenberg at Seybold...

Online On Campus *By Helmut Kobler* 41
In this excerpt from his forthcoming book *Campus Computing*, student and longtime *MicroTimes* contributor Kobler offers tips for navigating Usenet from your campus.

Prodigy *By Ed Kahn* 54
An ambitious joint venture by Sears and IBM, Prodigy offers a wide range of consumer-type activities, services and merchandise at bargain prices.

America Online *By Mike Markowitz* 60
Quantum's low-cost service for Apple II and Macintosh users is a great system for beginners because of its low cost and attractive interface, and it's just getting started.

Voice Hijacks The Information Age:
The Uncharted World Of Audiotex 68
By Brock N. Meeks
Audiotex has bypassed the user interface problem entirely by adopting a tool everybody already knows how to use—the telephone. And in the last few years, the field has become a marketing and information goldmine.

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BUSINESS SOLUTIONS

Windows On A Laptop *By Ed Kahn* 25
It's almost as good as having a truly portable Macintosh, and in many cases will even exchange files between Mac and Windows applications.

The Office Emergency And How To Minimize It *By Mikael Blaisdell* 26
Sooner or later, whether its a power outage, a disk crash, or an earthquake, your computer system will fail, however briefly. Consultant Blaisdell offers advice on planning and damage control.

Desktop Publishing For The DOS Office *By Birrell Walsh* 32
First of a two-part series on hardware and software choices for creating a system that works for you and won't be obsolete by COMDEX—what you need now, what you need later, and what kind of planning you should be doing.

NEWS AND VIEWS

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Dvorak's Last Column *By John C. Dvorak* 122
Wonder why Dvorak's always cranky? Consider his reading material.

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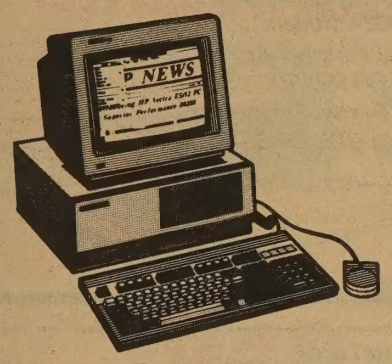

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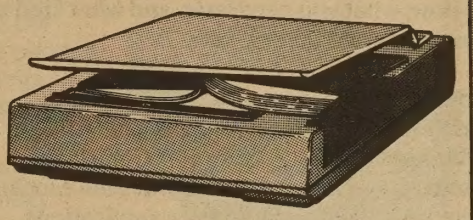

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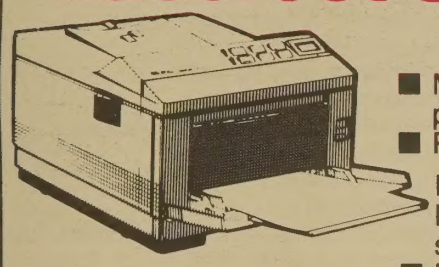

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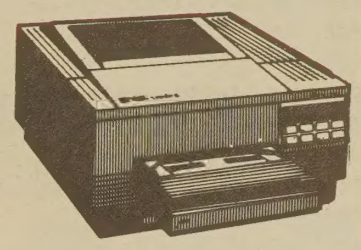

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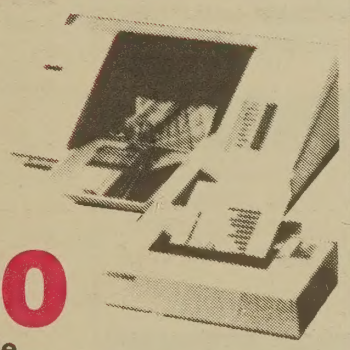

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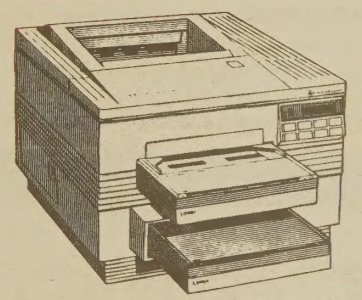

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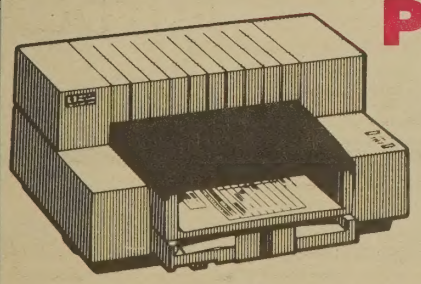

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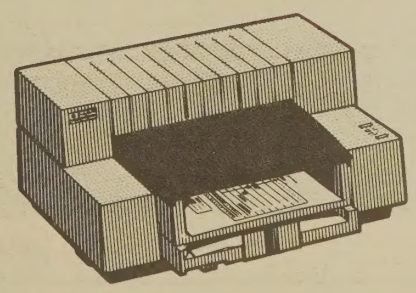

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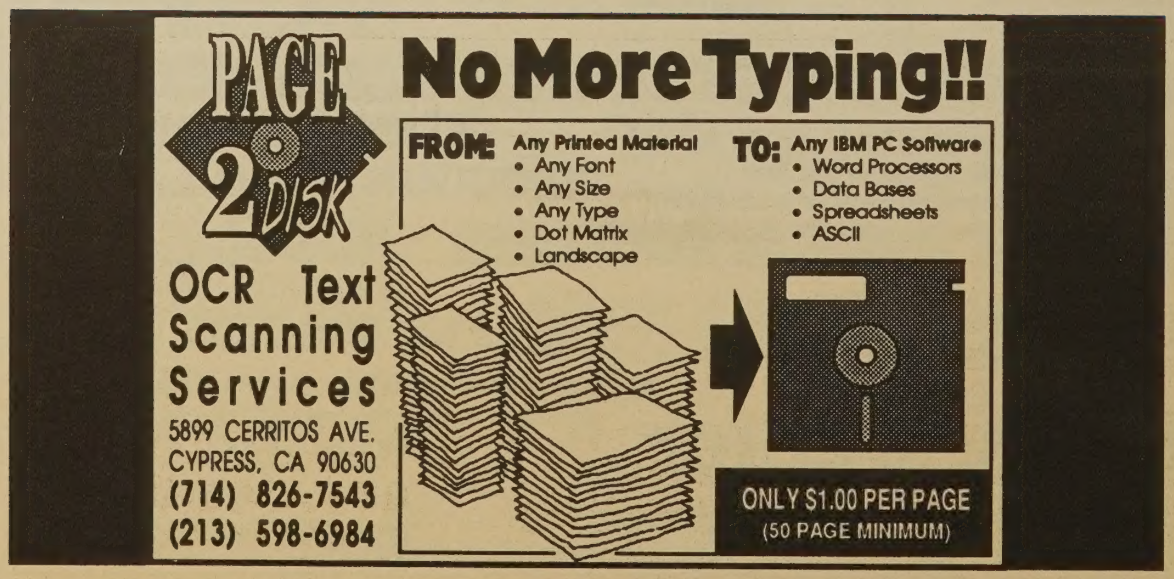

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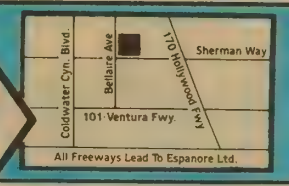

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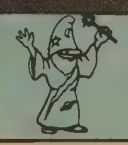

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NEWS & VIEWS

INDUSTRY INSIGHT

BY PAUL HOFFMAN

MICROPROCESSOR PATENT AWARDED TO INDIVIDUAL INVENTOR

Gilbert Hyatt, an engineer living in La Palma, California, was awarded a patent on a very basic microprocessor after a 20-year application process. The effects of the patent are not yet known, but they could be very wide-ranging.

Until now, almost everyone thought that Intel was the developer and sole patent-holder for the microprocessor based on its 1971 patent. However, Hyatt's patent dates to a year before that.

There are many reasons why the patent was not granted until now, mostly due to Hyatt's insistence on handling the patent himself without attorneys. The patent is only valid from the day that it was issued, so Hyatt cannot attempt to get back royalties for microprocessors. However, it is likely that he could get royalties for many microprocessors manufactured after July 17, the date of his patent.

Many lawyers feel that the patent can withstand the inevitable lawsuits since he re-filed it seven times during the 20-year process. That means that the US Patent Office has reviewed and scrutinized the patent eight times and is suitably impressed with its merits to issue him the patent. Often, patents that go through the re-filing process come out much stronger and easier to defend, according to many lawyers.

Hyatt has said that he will seek licensing fees for the patent, #4,942,516 called "Single Chip Integrated Circuit Computer Architecture", but has not shown any predatory interest in trying to get huge sums from microprocessor manufacturers like Intel and Texas Instruments. Many smaller manufacturers are likely to agree to the fees immediately, although others may wait for the reaction of industry giants such as Intel and IBM to Hyatt's requests. Hyatt invented the chip while working with his now-defunct company, Micro Computer Inc., in 1968. He holds over fifty other patents in many fields.

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

IBM ADDS PRODUCTS TO MINICOMPUTER AND MAINFRAME LINES

Hoping to lure back disgruntled clients, IBM introduced new low-cost computers in its AS/400 line and announced new, faster mainframes. The new AS/400 systems have built-in Ethernet and Token-Ring support and are aimed at people needing a file or communications server for a cluster of PCs. At the same time, IBM released a new version of OS/400, the operating system for the minicomputers.

The mainframe announcement capped years of speculation on the new systems, code-named Summit. The very-high-end mainframes are more powerful than IBM's current top of the line, the 3090. IBM used its extensive research into multi-processor computers to optimize the performance of the systems, some which include six parallel CPUs. The new mainframes use fiber-optic cables to pass information back and forth between the high-speed disk storage devices.

BORLAND MUST FIGHT LOTUS IN BOSTON

A federal court judge dismissed Borland's request to move Lotus's lawsuit against it to California. Borland had hoped to get the case heard locally both to reduce costs and because Lotus's successful case against Paperback Software has no precedent in the local

Until now, almost everyone thought that Intel was the developer and sole patent-holder for the microprocessor based on its 1971 patent. However, Hyatt's patent dates to a year before that.

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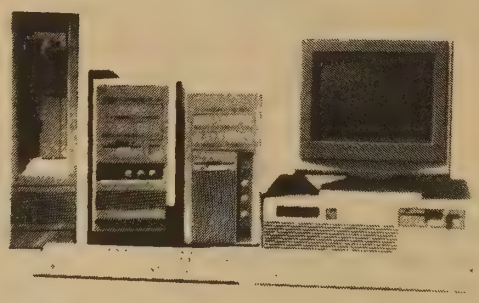

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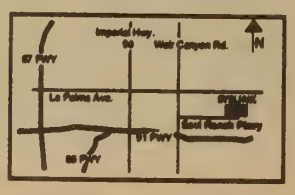

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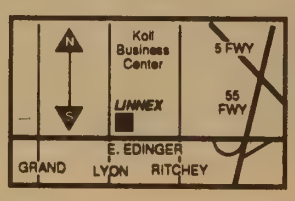

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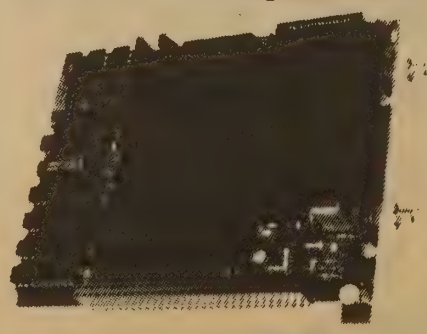

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federal courts. Borland said that although they're disappointed, they do not feel that having to fight in Boston will weaken their case. Borland is continuing to advertise arguments that Quattro Pro does not infringe on 1-2-3 due to its many interfaces and more advanced features.

AMD CAN CALL ITS CHIP "80C287"

Ruling that chip names are not protected by law, Federal District Judge William Ingram ruled that AMD's new 80287-clone chip could be called "80C287" and that Intel does not have exclusive rights to the chip number.

Intel's case against AMD also claims that AMD cannot use the microcode that Intel licensed to it for the math coprocessor, although Judge Ingram said he will not rule on that portion of the suit until sometime next year.

While ruling that AMD could call its $99 chip "80C287", Judge Ingram also ruled that AMD could not use the terms "genuine Intel equivalent," "100% Intel compatible," or "strictly compatible" due to speed differences between the AMD and Intel chips in their various configurations.

Many industry analysts assume that at least two companies will come out with 80386 clones in the next year...Companies may assume that the case sets precedent so that other manufacturers can use the "80386" moniker, but they may also want to stay as far from Intel's names as they can...

Many industry analysts assume that at least two companies will come out with 80386 clones in the next year; it will be interesting to see whether or not those clones use the same numbering

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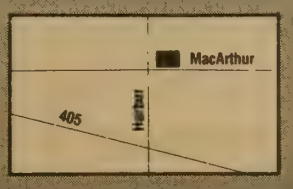

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While UNIX has been making headway on high-end PCs, the standard for making sure that applications run on all versions of 386-based UNIX has started to erode.

as Intel. Companies may assume that the case sets precedent so that other manufacturers can use the "80386" moniker, but they may also want to stay as far from Intel's names as they can—both to make their products look better and to give Intel one less thing to sue them over.

Since there will certainly be few 80386 clones, manufacturers do not need to worry too much about confusion. In the last few months, however, Intel has taken out large advertisements to convince buyers to insist on Intel chips in their computers. This may be aimed more at Motorola than at potential clone makers, but the effect might be to make buyers worry about non-Intel chips.

INTEL, AT&T, AND SCO'S NEW UNIX STANDARD

While UNIX has been making headway on high-end PCs, the standard for making sure that applications run on all versions of 386-based UNIX has started to erode. To stop that erosion, the three major players in the market have agreed to beef up the compatibility standard so that new applications can run on a wider variety of hardware.

The Intel Binary Compatibility Specification (iBCS), written in 1988, set down most of the rules for how to make applications run under UNIXes from SCO and AT&T, the two largest players in the market. However, there were many portions of the specification that were unclear or missing, and application vendors have discovered that they still needed to write different versions of their applications for different versions of UNIX. With iBCS edition 2, due from Intel later this year, those differences should be cleared up.

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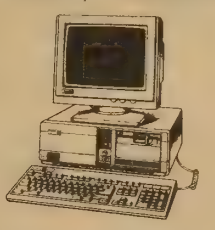

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Update: Who Needs DTP?

When desktop publishing was the "next big thing," it seemed so exciting. Everyone could make newsletters and presentations by themselves without having to send their material out to a typesetting shop. No more hassle with glue guns and t-squares for laying out text and graphics. Apple, the inventors and primary promoters of the term, made it seem so easy and cheap.

The first DTP tools were indeed easy to use, especially for Mac users. All that was really needed to take the first step towards freedom from typesetting was a PostScript laser printer and some new fonts. As it turned out, PostScript was pretty much unnecessary to most beginning DTP users, since they often used only the predefined sizes of text that came with their computers. Even though it was unnecessary, it proved a godsend for the few times that you needed an odd-sized font. DTP migrated to PCs as font technology for the Hewlett-Packard compatible printers improved.

By 1988, people doing color work started to get the tools they needed, and many magazines started being produced in-house. By early this year, it was estimated that some five million people had become desktop publishers.

Layout software became the rage as the ultimate software tool. Aldus made its fortune on giving everyone the ability to precisely lay out their text in formats ranging from magazine pages to books to newsletters. This, however, became DTP's first stumbling block: layout programs are not easy to learn if you don't know much about design. It's one thing to make a flyer with a word processor and print it nicely on a laser printer, but quite another to learn enough about layout to be able to understand the parts of a layout program.

Still, the DTP market marched forwards, sucking in more people every day. New hardware products such as large monitors made it easier to see whole pages at a time and super-high resolution laser printers brought the quality of the output up to typesetting standards. By 1988, people doing color work started to get the tools they needed, and many magazines started being produced in-house. By early this year, it was estimated that some five million people had become desktop publishers.

Until recently, no one stopped to ask why that many people would want to get so intimately involved with desktop publishing. Sure, it was not hard, but that isn't a good enough reason. In the dark ages of microcomputers, everyone used a word processor, and it became clear that there weren't really that many good writers (or even good spellers) using computers. In the middle ages, everyone started using spreadsheets, and it became clear that there are not many people organized enough to make complicated spreadsheets that were useful. Now it is becoming clear that, without some training, not many people can make good-looking pages even with the best of DTP software and hardware.

Lack of good design skills or time to learn a layout program should not deter most users from wanting to do some form of publishing on their computers. After all, laser printers are still easy to use, and there are now even more fonts to use on them. To the credit of the software industry, a huge percentage of the software available for PCs and Macs now makes very good use of the font and printer technology, so that even mundane applications like database managers can put out good-looking ("published") documents without forcing you to take the ugly output and force it through a layout program. The most popular Mac programs such as MS Word give you more choices than most people can handle for publishing options, and almost every Windows application does the same.

The question remains: who should learn more about DTP layout programs and why? Some of the "tricks" of DTP are, in fact, simple. The new book from Peachpit Press, *The Mac Is Not a Typewriter*, lists dozens of easy-to-apply tips that can help even the most rudimentary of typists make much better documents with any word processor. Most of the hints in the book apply equally well to the PC. With such guidance, most people's output will look good enough to the untrained eye that there is no need for layout programs. If most people can get away without "real" layout and all the jargon that goes with it, that leaves the rest of the field to the professionals.

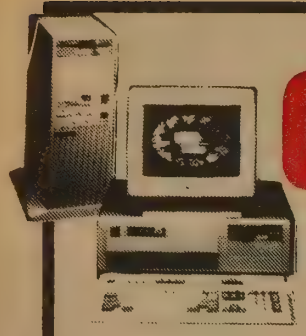
Of course, design professionals should all be doing computer-based layout by now.

Learning good publishing design skills is like learning to be a fine artist: lots of us would love to have the time to do it, but few actually are much good at it.

There is really no reason why everyone who works daily with type and formatting isn't using DTP. (Humorously, many computer book companies still use standard type and paste-up methods, even though they make a significant amount of money selling DTP books.)

There is certainly a significant need for people who can take word-processed documents and turn them into laid-out pages. A new field will emerge: document formatters. This has always been the job of design shops, but design shops usually did everything from soup to nuts. Now that many companies have easy access to the tools to edit the text and even format the characters with bold, italics, and so on, design shops may be reduced to making layout templates and pouring the prepared text into them. The customer could then see how everything looked and make any desired visual changes. The design shop would then make a final and print it, probably on an in-house high-quality printer.

Thus, not everyone needs to be on top of the DTP field. For simple brochures and reports, the top word processors on the PC and Mac can fill most of the DTP needs. Those that can't be filled should be able to be taken to someone with the requisite design talents and tools. Learning good publishing design skills is like learning to be a fine artist: lots of us would love to have the time to do it, but few actually are much good at it. The computer industry should stop pressing people to learn DTP but make sure that they know where they can find it. ■



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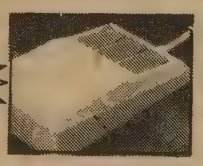

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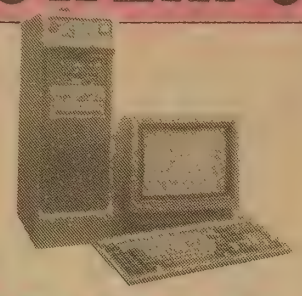

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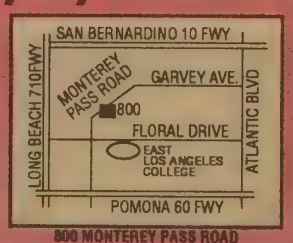

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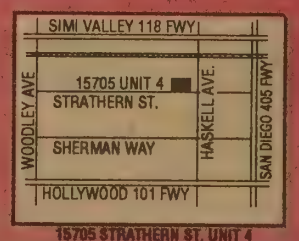

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Letters

ALR REBUTS AST

This letter is in response to an editorial interview that appeared in the last issue of *MicroTimes,* and a comment made by Tom Yuen of AST.

In reading this article it is obvious that Mr. Yuen's comment about the company down the street with three letters that starts with an A is Advanced Logic Research, Inc. Mr. Yuen grossly misstated the number of technical support personnel ALR has as being only five, when in fact ALR has over 25 technical support persons to handle any questions our customers may have. Furthermore, ALR offers regular training classes and programs for dealers that wish to become ALR Authorized Service Centers.

The comment that AST requires 120 tech support people to handle their technical support needs suggests that AST may be running into a relatively high failure rate caused by either quality control or reliability problems with their systems.

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Dave Kirkey
Vice President of Worldwide Marketing
Advanced Logic Research, Inc.
Irvine

AUTODESK AND VC: THE OTHER SIDE

John Walker and his associates have performed spectacularly in developing a unique software product and building Autodesk into a highly profitable company.

John Walker's article ["Autodesk Meets The Venture Capitalist," #72] on his contacts with me is correct but not complete. He has apparently forgotten other discussions we had in 1982. In my first talk with him I said Autodesk could most probably survive without outside capital and that this is the best of all worlds—the classic example is Hewlett-Packard in the late 1930s. I then told him the history of Shopsmith, the immensely successful company my brother and I founded in 1947 with $30,000, for which we never had outside capital.

I also said there were possibly two reasons why Autodesk might consider seeking outside capital. One reason was to greatly expand their then-tiny marketing effort to give them far faster growth. The second reason was that I could provide the distilled experience of some one hundred high technology companies, lessons learned over a quarter century of venture capital investing.

I also explained that venture capitalists had learned that an open spigot on options often bred serious problems, and that additional options could always be granted based on outstanding performance. I have always structured my venture investments to provide maximum incentive for those responsible for the future.

In our final meeting, at which all of the senior people were present, I stated that if they decided against Continental Capital's proposal I would personally like to invest up to $100,000 and would buy common shares from any principal who might need liquidity at the same price we had discussed for the preferred shares.

Do I regret not being an investor in Autodesk? Of course I do. Our investors would have been very happy indeed with $37 million. This would have been frosting for me on the $100 million plus from American Micro Systems, KLA, Rolm, DataProducts, Four Phase, Capex, Telecommunications Technology, and our other successful investees which was distributed by Continental Capital from its total net capital invested of just $750,000.

Bootstrap start-ups are all too rare in today's world. I wish John and his associates continued success.

Frank G. Chambers
San Francisco

TANDY HELP ON THE WAY

Your June 25th issue contained a letter from a desperate Tandy 1000-SX, DMP430 owner. I own the same setup, and understand his frustration—it's me, three years ago.

For any Tandy 1000 series owners among your readers, check out *One Thousand Magazine,* "Especially for Your Tandy 1000 Personal Computer." They recently absorbed subscribers from the publication *1000.* Subscription/sample copy rates are available by writing One Thousand Magazine, P.O. Box 1688-EM, St. Louis, MO 63043-0688. Currently it's a monthly magazine, $24 a year.

"For any Tandy 1000 series owners among your readers, check out One Thousand Magazine, 'Especially for Your Tandy 1000 Personal Computer.' This isn't a glitzy magazine; it's a nuts-and-bolts 'user's' magazine."

This isn't a glitzy magazine; it's a nuts-and-bolts "user's" magazine, and one every 1000 owner should see!

By the way, as a freelance writer and computer fanatic, I love *MicroTimes.* Although some of the articles are just a bit above my current level of interest and expertise, that merely makes me stretch and discover new capabilities. I save all the issues.

I pick up *MicroTimes* to get answers, and I've never seen an issue that didn't teach me something! One thing I really like is that you are not overburdened with reviews—just the right amount. I hope we'll see some of those neat little vending machines here in the LA County area soon.

Evelyn Mayfield
Torrance

Datacomm Directories, Fontmakers & Dark Data Deeds

BY JIM WARREN

This column concerns systems that can be built, but haven't been. It also concerns some realizable fantasies that shouldn't be.

REALIZABLE FANTASIES

DATACOMM DIRECTORY'S DETAILS

Data communications programs control data modems and fax modems. They invariably have "phone directories." These typically permit the user to enter phone numbers to be dialed by the software, and include arbitrary strings of characters "naming" each number. But:

Phone numbers should be allowed to include at least parentheses and hyphens to aid human readability, even though they are unneeded by the dialing software. Most directories allow this; some, sadly, don't.

Commas are also commonly permitted, indicating a 1- or 2-second pause in the dialing sequence—essential for most office phone systems and international direct-dialing. Consider these minimum requirements.

Most datacomm packages restrict name entries to relatively few characters. Far better: Permit long identification fields—at least 60-80 characters. Better still, allow such ID fields to have multiple lines, for arbitrary notes, reminders and other user information.

LEAVE IT THERE!

Usually, this "directory" is displayed upon command, visible until the user picks a number. Then the directory display promptly disappears.

Better: Allow the *user* to decide when it should disappear. Let the user choose between automatic-clearing and "when-I-decide" clearing, as a switch the user could set—and toggle—at any time.

Include these facilities in programs for data communications, and fax-modem software for computer-generated fax communications. (If you haven't yet succumbed to fax modems; check 'em out! I recently received an InterFax 24/96 box, from Abaton, combining a 9600-baud fax ability with a 2400-baud data-modem, and I'm *hooked*.)

ABOUT FONTMAKERS

Modern computers allow programs to deal with alphanumeric characters as arbitrary arrays of bits or pixels, rather than expecting use of a single, predefined, hardwired character font, as is true in antiquated systems. This facilitates unlimited variety in font sets and character shape, size and shade.

Such font sets were first offered only as bitmaps. Doubling the size of such bitmaps doubled the visibility of their jagged edges. Adobe's PostScript popularized the alternative of offering font sets as smooth character outlines, defined by size-independent mathematical curves. Many cheap or free bitmapped fonts exist, but there tend to be fewer outline fonts, which are usually much more expensive.

To use outline characters, a fontmaker (such as Adobe's Type Manager) first converts them to bitmaps, smooth at the desired size. That is, outline fonts can—and must—be converted to bitmaps for use.

So let's have reverse fontmakers that take those cheap or free bitmapped fonts, calculate their mathematical curves, and store those outlines in PostScript format—from which a PostScript fontmaker can create smooth characters like the originals, but at any size.

PROTECTION FROM THE SUN

Cincinnati Microwave's now marketing a very compact, battery-powered traffic radar detector named Solo. No cords; no tangle; no need at all for a cigarette lighter. But it still requires a 9-volt battery that must be replaced every six months or less.

Instead, they could use a solar power array and a rechargeable battery.

Font sets were first offered only as bitmaps. Doubling the size of such bitmaps doubled the visibility of their jagged edges. Adobe's PostScript popularized the alternative of offering font sets as smooth character outlines, defined by size-independent mathematical curves.

(Neat tidbit: Solo has an automatic power-off battery-saver. How? Why, of course, it feels for motion, then shuts down after 30 minutes of immobility. 800/637-0322, $345+s&h; and no, I'm not gettin' any deal from 'em.)

MACCONNECTION DOES SOMETHING FOR THE EARTH

Last month, I urged software producers to be more environmentally sensitive and stop ridiculous packaging excesses—and tell the world of their worthy deeds. Well, program publishers are still wrapping tiny disks in massive waste-to-be, but mail-order's MacConnection (800/334-4444) has done precisely what I proposed. They switched from plastic "popcorn" to recycled newspapers as packing materials and started using smaller boxes—and reported their praiseworthy practice in a full-page notice.

Good goin', folks. Let's hope the rest of our industry cleans up its act, and our landfills—

continued on page 102

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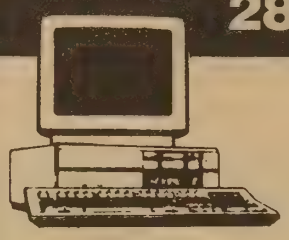

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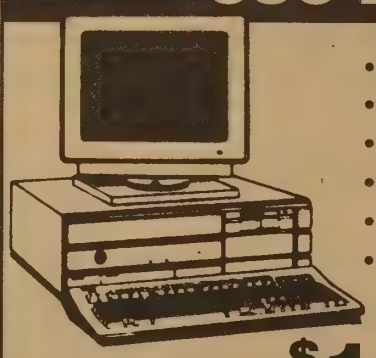

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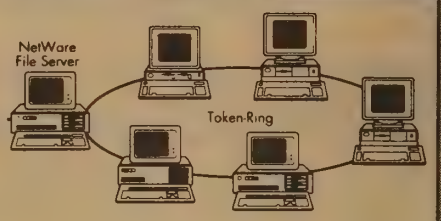

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BUSINESS SOLUTIONS

Windows On A Laptop: Almost As Good As A Portable Mac

BY ED KAHN

The big bomb of 1990 has exploded upon the world of computing. Windows 3.0 ($149) has been released. While this product is not specifically intended for the laptop market, its impact is sure to be felt there.

This product sets the stage for the rug to be pulled out from under Macintosh. For the rug to be successfully removed, there will have to be supporting products that work in tandem with Windows...and these are slow in coming although an amazing number of software packages are currently available. Nevertheless, the release of the newest and best version of Windows does not in itself do much more than open the door.

When you install Windows on your computer—a simple procedure that is easily explained in the documentation and requires between 6 and 8Mb of hard disk space—you will be able to operate your computer from a mouse with a true graphical interface. (Microsoft sells a combination package that includes both Windows and a serial mouse for $225.)

For years, people have chosen Macs because of their ease of operation. Increasingly, that argument will be something out of the past. And with the dearth of Macintosh portables, the laptop market belongs almost exclusively to the IBM/compatible marketplace.

So now, for a few bucks, you can install a program on your portable that will make it operate as much like a Macintosh as possible. When you couple this with applications that are available for Macintosh, it is simple to use an IBM style portable and port the data files back to a Macintosh desktop machine.

SO WHAT'S THE BIG DEAL WITH WINDOWS 3?

Windows has been around for a long time, so why all the fuss about a new version? A number of changes make the new version a major step forward.

First, unlike previous versions, the new one allows you to run your regular DOS applications from within Windows. Not that these older non-Windows applications will run from the graphical interface that you can control with a mouse, but you are able to call these applications up from within the Windows environment. This is where the Mac still has Windows beat—for now. On a Mac, all applications are always made to fit into the graphical interface format and all applica-

continued on page 30

For a few bucks, you can install a program on your portable that will make it operate as much like a Macintosh as possible. When you couple this with applications available for Macintosh, it is simple to use an IBM style portable and port the data files back to a Macintosh desktop machine.

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The Office Emergency And How To Minimize It

Sooner Or Later, Your Disk Will Crash. Your File Server Will Fail. A Virus Will Infest Your System. Someone Will Steal Your Computer. Here's How To Minimize The Damage.

BY MIKAEL BLAISDELL

Early morning in the office, fresh cup of coffee in hand, all's right with the world...or is it? Something doesn't sound quite right. Something that should be sounding isn't. What...? Uh oh, the network file server's down, and people are getting excited. Looks like it's going to be one of those days...

The new marketing campaign requires that the sales figures for the installed base be correlated to the dealer channel, and compared to the activity levels in Customer Support. Just to make it interesting, the Sales group figures are a function of a dBASE application, the Support team uses TSS/OL, and you have your own favorite DBMS and spreadsheet. The project is doable, but it's going to be quite a learning experience...

You've labored long and hard over this spreadsheet. It's truly a work of art. But, being in a hurry, you didn't save it to the hard disk. Just a few more changes, link to another spreadsheet file, and... what's this? Corrupted file? WHAT DO YOU MEAN "CORRUPTED FILE"!?!?!?

Most of us never need assistance with our computer until that evil day when we need it very badly. We've learned enough to work our way around the everyday functions of our jobs, and to handle the occasional glitches and/or inconsistencies. Maybe our techniques aren't the quickest or the most efficient, but they work. The job, one way or another, seems to get done.

Sometimes, however, we find ourselves up against a new challenge, and/or Mr. Murphy's well-known Law. At such times, even the most gentle of people can become raging maniacs. Call the dealer, call Tech Support, call Field Service—call anyone, everyone, *but get this misbegotten thing back up and running or else... and my data had better be there!*

It's a sick feeling, looking at the machine that we'd taken for granted would always be obediently present, until the day that it failed. Lurking behind the upset of the current situation is the unpleasant awareness that no matter how much we'd like to point fingers elsewhere, the true responsibility is our own. We know that electrical power has been known to fail, and also to cause damage in the process of failing. Power cords are accidentally unplugged, floppy disks are lost or damaged, files are erased in error.

Regardless of whether the problem is a system failure or the requirement for a new application, it's your computer and your job. More importantly, it's your data, and no one is likely to care about it as much as you do. Operating the computer without regard for the probability of errors and resulting losses is a recipe for disaster. Likewise, it is impractical to assume that a minimum set of computing skills will always be enough for you to get your job done. The best Customer/Technical Support starts with you.

HOW PREPARED ARE YOU?

To assess your current status in this area, begin by playing "let's pretend." For example:

Your hard disk just buzzed and stopped working. No sound, no blinking lights. Won't boot, can't be read. What will you do?

First, ask yourself the question that all tech support people absolutely hate to ask: Do you have a backup? (As any support rep will tell you, the vast majority of the time, the answer is no.)

What would it cost you to replace all of your data? Can you replace it all from printed records? Do you still have the master disks for all of your programs? Do you know how to install them? Do you have the manuals?

In the middle of a long process, the screen suddenly clears and displays a message saying (Corrupted File, or Invalid Record Format, or Sector Not Found, or File Not Available). Do you know what to do? Do you know what things to check before you pick up the phone? And what will you do if the phone isn't answered?

The phone rings in the middle of the night, with a voice telling you that there's been a fire at your office. Between the flames and the water used to extinguish them, your computer and all diskettes are a total loss. What will you do over the next few days to run your business?

The above scenarios, while unpleasant to think about, are very real. They have happened to people; they may happen to you some day. The difference between a minor annoyance and a major disaster is entirely up to you and the precautions you take before the situation occurs.

If the answers to your "let's pretend" questions are a cause for concern, the time for action is now.

The cure for the condition is also fairly simple. By imagining a disaster scenario, and practicing your responses to it, you reduce the impact of the problem. You also gain a more accurate realization of the value of your data and equipment, plus a greater understanding of how to make use of them. Your dependency on outside resources is decreased; you're on your way to being "self-supporting" on most issues.

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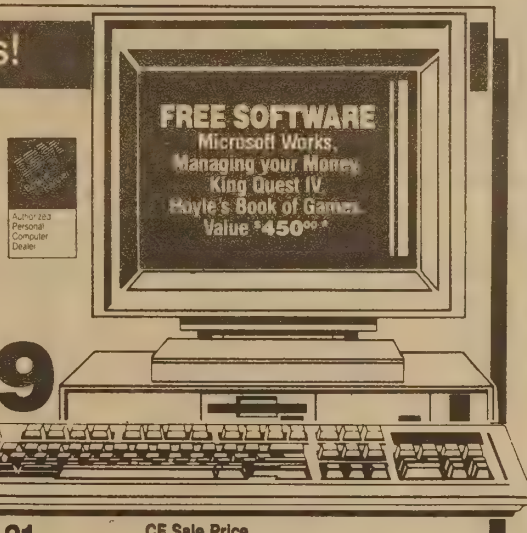

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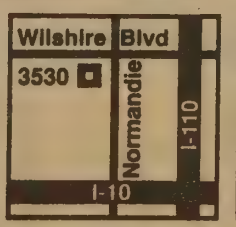

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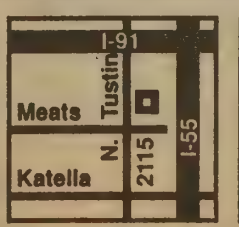

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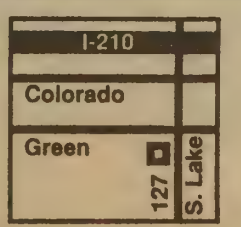

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The "what-if" problem exercises should reveal an essential truth. Every computer system should have a designated System Manager. The System Manager doesn't need to be a programmer, a hardware engineer, or certified "techie" in order to be effective. However, the manager does need to know how the system is being used and what data and programs are stored on it, and how to adequately preserve and protect them. Further, the manager needs to have taken the time to plan for all reasonable problems before they occur, to know what resources will be required and how much is at risk. Finally, the manager must know where and how to go for help—and what to expect once help has been reached.

The general computer user has similar responsibilities to those of the system manager. It isn't necessary that users personally know everything, but they all need to know the basic facts about their computer resources.

SUPPORT RESOURCES: PLAN NOW

The **dealer** or **reseller** who sold you the system is usually the most immediate source of assistance and/or education. Some are good, some not; if you spent some time shopping around, the question of support was probably a major factor in your buying decisions, and you already know what your dealer can and cannot do—and at what cost. If you don't know, now is the time to find out. Financial consultants will tell you that the time to get to know your banker is before you need the loan, and the same is very definitely true of customer support departments.

The "what-if" assessments you have done will have given you all of the data you'll need

What would it cost you to replace all of your data? Can you replace it all from printed records? Do you still have the master disks for all of your programs? Do you know how to install them? Do you have the manuals?

in order to evaluate the costs of maintenance and/or support plans offered by your dealer. As an added benefit, your preparation will thoroughly impress him and ensure that your name will be remembered later.

Also, investigate the availability of local **consultants**. Research them carefully before you need them, checking references and getting to know their capabilities. The best con-

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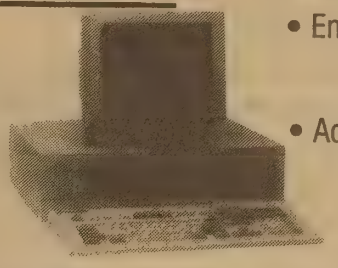

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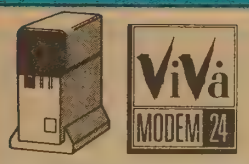

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Windows On A Laptop

continued from page 25

tions can be run with a mouse in similar fashion. Once you know how to run any application on a Mac, the other applications are pretty similar in appearance. As more and more programs are written to the Windows specifications, that will be the case for DOS programs running under Windows as well. A standard interface is finally emerging.

A second major advance with the new version of Windows is that it will automatically configure itself to the capabilities of your computer. It runs at its maximum strength on an 80386. In this configuration, it allows true multitasking. Also, it will allow non-Windows applications to run within smaller windows rather than requiring the whole screen. On less powerful machines, these applications all take the entire screen. On 386 machines, you can get real multitasking of non-Windows applications.

A second configuration is what Microsoft calls Standard Mode. It runs on 286 machines with at least 1Mb of memory—meaning that there is about 360K of extended memory. The more extended memory, the faster it operates. This mode also allows you to switch among non-Windows applications by utilizing the extended memory.

A third configuration is Real Mode—designed to run applications that were compatible with older versions of Windows, but not yet upgraded to the current version. This is also the only configuration available to computers with less than 1Mb of memory. This means that older computers with a bare 640K will be restricted to running in Real Mode.

In order to get real benefit from Windows 3.0, it is necessary to have a computer with at least an 80286 and 1Mb of memory. This includes many of the portables we regularly discuss. While I still see a lot of use for the ultra lightweight boxes that have no hard disk and a basic 640K, I feel that a year or so from now these will seem like outmoded machines. As time moves on, the Windows interface will become the standard interface. More and more new software packages are being prepared to accommodate the Windows interface.

While this is the wave of the future, it is still in its infancy. It will take a long time for all of the applications on the market to develop smooth interfaces with Windows. If we look at the Macintosh market, it is amazing how few word processors, for instance, have really been able to make the transition to the Mac interface. This is one of the advantages Microsoft Word has. It works equally smoothly on the Mac or DOS machines. ■

BUSINESS SOLUTIONS

Operating the computer without regard for the probability of errors and resulting losses is a recipe for disaster. Likewise, it is impractical to assume that a minimum set of computing skills will always be enough for you to get your job done. The best Customer/Technical Support starts with you.

sulting relationships are long-term ones, mutually profitable and balanced. Be wary of getting too good of a deal; such relationships seldom last for very long.

User groups are another source of information and assistance. If there is a local chapter, attend a few meetings and get to know the chapter officers. They can be excellent sources of consultant referrals and reference checks. Plus you'll probably meet other people who use their computers to do tasks similar to yours, and they may be able to show you some improved techniques and tools and/or give you advance warning of potential problems.

The local user group may also offer a **bulletin board**, or one may be available on a national time-sharing service. These are incredibly effective resources. For the cost of a modem and a reasonable access charge per hour, you can ask questions and tap the knowledge base as much as you want.

Free software is often available for downloading, but be very careful in this regard. Simply accessing a bulletin board is safe, but downloaded software can contain viruses and other unpleasant surprises. The national services (CompuServe, GEnie, the WELL, etc.) are likely to be safe, but get to know the system operator and be very careful about using downloaded software.

Local community colleges and adult education schools will usually offer courses in a variety of computer topics, at a reasonable cost. The instructors may also provide consulting services on their own. Note that as your employees' skills are enhanced, they become more valuable to you, and that fact should be reflected in their pay. If you don't effectively recognize their increased knowledge and skill, someone else may.

For hardware service, and even some software products, there may be **third-party (independent) support providers** available to you. Similar to an independent automobile repair facility, some of these may be as effective as, and much cheaper than, the manufacturer's service. The risks involved may be similar as well; be sure to check references and carefully investigate the guarantees. As with a consultant, the best relationship is long-term and mutually beneficial.

The **manufacturer's hotline** is perhaps the most commonly known support resource, and is usually the first to be called when something goes wrong. Increasing the effectiveness of this resource requires that you take some action in advance.

First and foremost, register your purchase with the hotline group. Most companies will want to know the serial number (from the product disk, etc.) and the version number, and may ask that you designate one person in your organization as the contact. They will also want to have your mailing address. The advantage of all of this to you is that if there is a newsletter or new products/upgrades mailing list, you'll now be on it.

More and more, manufacturers are beginning to offer **subscription support services**. If you've done your homework, you'll be in a good position to evaluate the cost against the benefits of such services. Again, if you're going to rely on their support, take the time to investigate and get to know them in advance. You may want to explore the advantages of becoming a beta site, testing new versions before they are released. Exercise caution, however; while you may get free upgrades this way, you also get to be the one to discover new bugs.

The above suggestions are just that: suggestions. They won't do you much good if you don't take the time to explore them. When The Day arrives, and your computer is down or otherwise erratic, it's too late to think about self-support or to do advance planning and/or preparation. Tempers will be frayed, time will be short and tension high. The difference between a stressful experience and a manageable one is entirely up to you. And remember, the job you save just might be your own. ■

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Desktop Publishing For The DOS Office

Tips And Recommendations

BY BIRRELL WALSH

You've decided to set up desktop publishing for your company. Your company has standardized on DOS machines. What do you do? What are the best choices for you, and what are your costs? What do you have to buy, and what can you skip? In this article and its sequel, we will examine the choices you have to make in hardware and software. Of the many products available, we will tell you which have worked for us and why we like them.

The answer to the question "What should I get?" is always "That depends..." We will identify the factors on which each answer depends, so you can put your money into the best hardware and software combination for your needs. We will also mention dead ends that you could get caught in. All the street prices are from *MicroTimes*' September issue.

THE HUMAN FACTOR

It is easy to think that hardware and software are your biggest investment. In fact, they are nothing of the kind. Your biggest investment will be in people.

Whether the person who does the publication is you or an employee, you will spend more time and money on people than you will on the products you buy off the shelf. The system's operator will make it a worthwhile investment or a painful white elephant. That means that when you look at a product, you should ask yourself what its impact will be on the person who will sit at the computer for hours designing your publications. If the product facilitates the work, it will pay for itself. If it makes the work difficult it will quickly lose you any savings you might make by buying cheap.

Is the product ergonomic? Is it designed so that what you do naturally is the right thing, and so that it fits in with the shape and movements of the human body and the human nervous system? A mouse that fits the hand easily may save you a case of carpal-tunnel syndrome. A monitor that flickers or squeals may damage vision or cause headaches. Let the worker who is going to use it test the system. If he or she likes it, it is much less likely to be a burden later. If *you* are the user-to-be, don't let dollar signs get in the way of taking care of yourself.

PART 1: HARDWARE

WHERE TO BUY

The second thing to think about is where to buy. Our recommendation is simple: Buy hardware from someone local who will service it locally. The local support is worth a few dollars more. Buy software, on the other hand, from the cheapest source that can be trusted to deliver it. Often that will be a mail-order house in a far place. Support for software comes from the manufacturer anyway; there is no benefit in buying locally unless you *know* the dealer offers software help.

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XT? AT? 386?

Recommendation: You *must* have a hard disk to do desktop publishing. If you have a 286, keep it for now. If you have an XT-compatible (an 8086, 8088, or V20 machine), upgrade to a 386.

The two major desktop publishing programs are Xerox's Ventura Publisher and Aldus' PageMaker. Both of them use the Windows environment. The Windows environment also gives you access to essential painting and drawing programs.

Therefore, you need hardware that supports the new Windows version 3.0 well. The minimal hardware that will do this is the 80286 machine, of which the IBM AT was the first example. If you have an 80286 machine, you do not need to upgrade at this time. Since the prices of 386 machines are dropping, they will be a better buy tomorrow than today. Hold for now.

If you have an older machine with an 8086, 8088, or a V20 processor, the sort that is called an "XT" or an "XT clone", it is time to upgrade. You will not be able to run Windows quickly or well on the machine you have. When you do upgrade, do not settle for an AT machine. Software will be made in the near future that will not run on the 80286, and you will be unable to use it.

If you work with documents of any size, you will value the fast processor and large memory access of a true 386. Do not buy a 386SX. The SX has a narrow data path—it thinks fast but talks slow. When you have an application like desktop publishing constantly talking to the hard disk, the monitor and the printer, you want that wide data path. If this is what you're going to be doing, ignore the blandishments of those trying to peddle you a 386SX or 80286, and go for the full-featured 386.

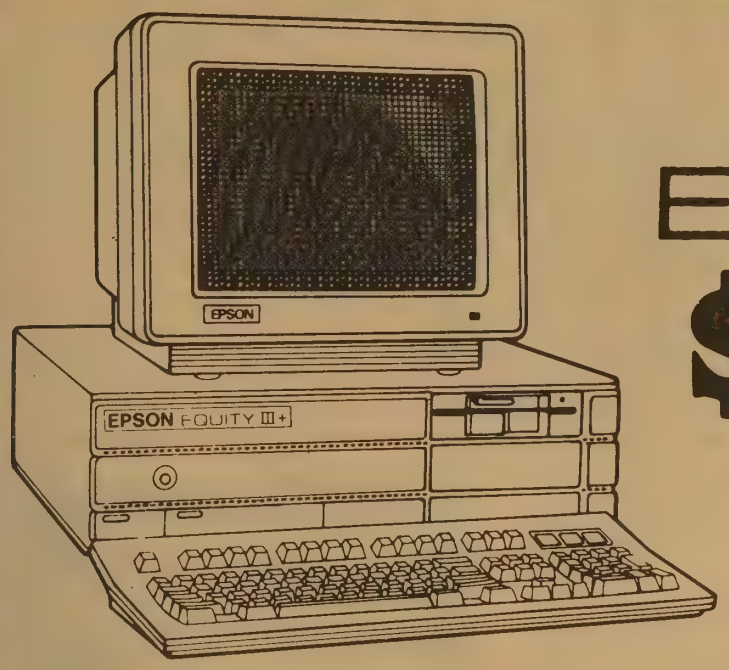
POINTERS

Recommendation: Buy a Microsoft Mouse, unless you do a lot of drawing. Then consider a Mouse Pen.

Step by step, Microsoft is coming to dominate the DOS computer industry. In the case of mouse technology, they did it by putting out a good product. Microsoft Mouse compatibility is the industry standard.

The latest Microsoft mouse fits the hand well and is more comfortable to use than any other mice we have tried over the years. You can tailor its responses and sensitivity. It is available in a model that plugs into a serial port or a "bus" version that comes with its own card. You can get it for $90, or bundled with Windows 3.0 for $149—a good deal since you will need Windows anyway.

If you do much work with graphics, you should try out the Mouse Pen from Appoint. You hold and operate it like a standard pen. The



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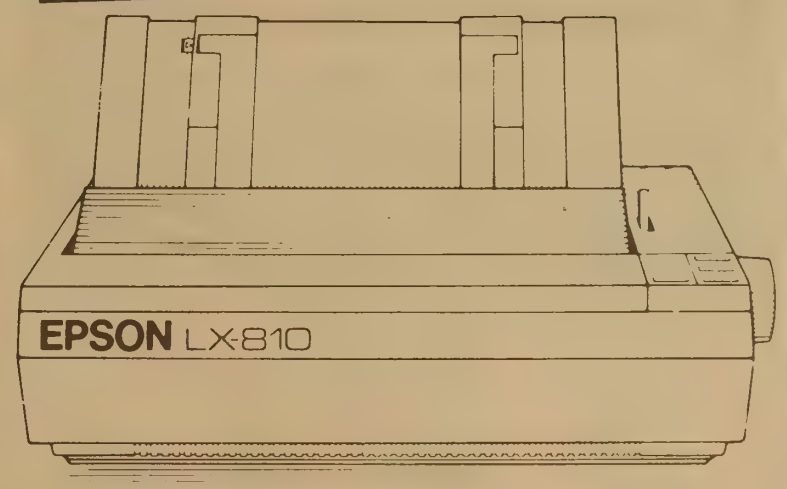

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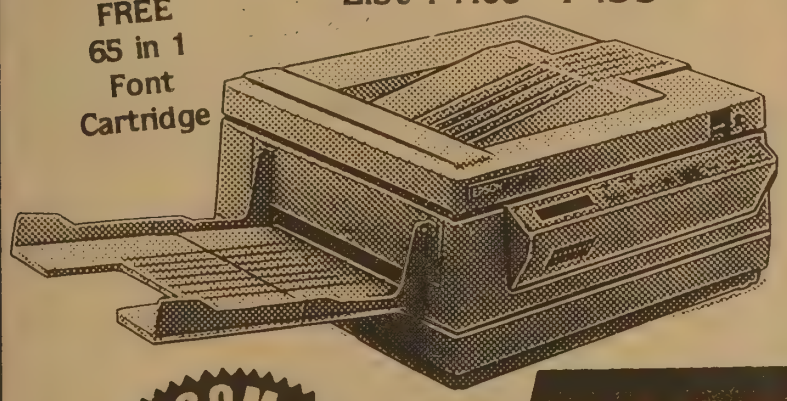

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buttons on the Mouse Pen are on the column of the pen. It is considerably easier to use than a mouse if you have to do a lot of drawing. The $149-list-price Mouse Pen may be hard to find; you can call Appoint at (800)448-1184. If most of your work is point and click, with just an occasional graphic, the Microsoft Mouse is easier to use.

GRAPHICS BOARD AND MONITOR

Best-case recommendation: Get a display system (monitor and display card) that will give you 1024 x 768 pixels of resolution, non-interlaced. Minimal: Stick with a Hercules display, but get a black-and-white instead of an amber monitor.

You need a good display to see pictures and text as they will be printed. This is a high-ticket part of getting into DOS desktop publishing. It will cost you at least $800 to do it right. Sorry it costs so much—blame the folks who thought no one would want true graphics on IBM compatible computers.

If you settle for the Hercules-compatible (or EGA) system you started with, every graphic image and typeface will be vertically distorted. What will print as a circle looks like an oval on the screen. That works fine for composing text, but it does not work when you are judging how your publication will look.

But why go beyond VGA? If you can get a good VGA monitor for $300 and a board to drive it for $100, why spend another $400 going beyond the 640 x 480 resolution of standard VGA?

VGA displays do not have distortion, but they do lack resolution. 1024 x 768 displays give you the sharpness you need for precision. Since the most expensive part of your investment is always people, it is worth spending an extra $400 to let those people do precise work. You get two and half times as many pixels displayed in a 1024x768 display as in a 640 x 480 standard VGA. The extra resolution will make it possible for you and the people you are working with to do a much more elegant job. Display standards are developing so fast that it is wasteful to buy less. You will be losing money by buying into obsolescence. EGA, the standard which preceded VGA, is already obsolete.

If you have an XT or XT clone, it is time to upgrade. You will not be able to run Windows quickly or well on the machine you have. When you do upgrade, do not settle for an AT machine.

For a display card we chose the remarkably easy-to-install VGAWonder by ATI. This board is made by Canadians (the same folks who smuggled our diplomats out of Iran, remember?) and like most Canadian products it is well-made and a good value. It will display up to 1024 x 768 non-interlaced resolution, but will also support VGA, EGA and Hercules resolutions. The price is among the lowest in the field, while ATI gives you the highest available quality. Their technical service is skillful. This is a bargain at the street price of $199.

It is possible to spend $2,000 for a high-quality monitor. Fortunately, you do not have to. We found that the Sony 1302 and 1304 monitors served very well. Sony uses the same crisp Trinitron technology in their monitors that they use in their television sets. You can obtain the 1302 and 1304 on the street for $599 and $689 respectively.

Both are multisynchronous monitors. Each is capable of displaying EGA, VGA (480 x 640), EVGA (800 x 600) and interlaced 1024 x 768 signals. The difference is in the top and the bottom of the display abilities. The Sony 1304 can also display the faster 1024 x 768 *non*-interlaced display, without the flicker which some people perceive with the interlaced picture. The flicker, for those who notice it, can be distracting and even painful. On the principle that people are the most important part of your publishing operation, you would probably spend the extra $90 for the 1304.

Buy hardware from someone local who will service it locally. The local support is worth a few dollars more.

You might consider the slightly cheaper 1302, which cannot produce non-interlaced output at 1024 x 768, if you need to use the monitor for a second purpose: CGA display. CGA is the oldest and coarsest resolution of all DOS displays, totally unsuitable for desktop publishing; but some people make their monitors serve double duty as a secondary display for their laptop computers. Many of the recent crop of laptops (like the Toshiba 1200xe) have a CGA display and can use an external monitor. If you have this special need, consider the Sony 1302, because the 1304 will not display CGA. Otherwise, get the Sony 1304.

If you decide not to get the optimal display, stay with what you have for now. Probably that is a Hercules-compatible display, which will leave you with a vertically distorted view of graphics. You can considerably reduce eye-strain by spending $100 to $150 on a black-and-white monitor to replace the amber monitor you may have. We have used the Nanao 3030 for several years. It is a reliable performer with an attractive screen image.

LASER PRINTER AND EXTENSIONS

Minimal recommendation: You must have a laser printer to do desktop publishing. Get a Hewlett-Packard compatible printer with enough memory (1.5Mb at least) to do full-page graphics. Optimal: Consider making the printer PostScript compatible.

The laser printer's 300 x 300 dots-per-inch resolution is the minimum acceptable for photo reproduction. If you want to be in the business, you will have to have access to a laserprinter.

Hewlett-Packard's LaserJet series has set the DOS standard. You can obtain excellent laser printers that are compatible with HP's from a variety of manufacturers. If you already own a laser printer that is compatible with at least an HP series II, you only need purchase enough memory to allow full-page graphics. If not, expect a street price of at least $1000 for a printer.

Three hundred dpi is the minimum acceptable resolution. Considerably better resolution is available, and one way to get it is to standardize on PostScript-compatible output. The output is not fed to the printer as a series of dots, but as a description of the page in a language which the printer must interpret.

The additional intelligence in a PostScript printer can make it $1,000 more expensive, but Pacific Data has developed an alternative.

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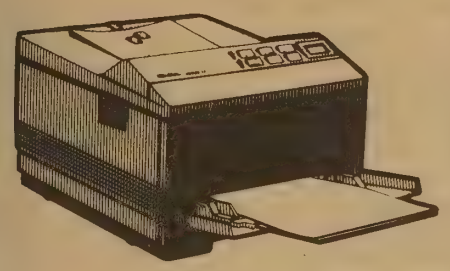

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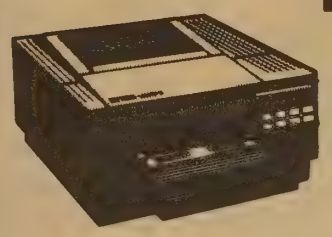

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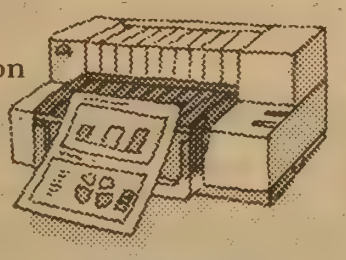

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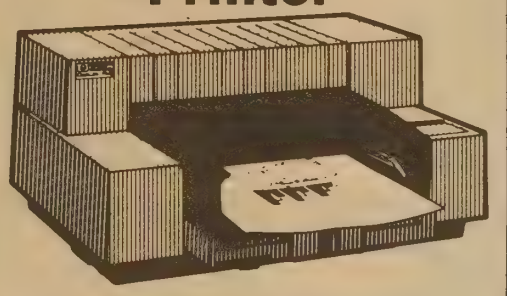

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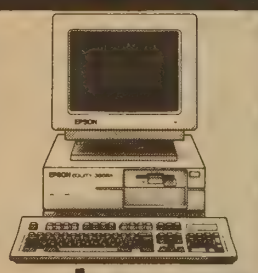

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They market Pacific Page, a cartridge which fits into the same port as a font cartridge. It serves as ROM to make an HP-compatible printer PostScript-compatible. You will be able to print PostScript output at the best resolution available on your printer. You will also be able to print your documents to a file, and to take the file to PostScript-equipped professional printers. They will be able to print from your file at resolutions of 1200 dots per inch or more.

Street price for Pacific Page is around $400. You will need 2.5Mb of memory in your printer, which Pacific Data Products will also sell you.

SCANNER

Recommendation: Get at least a cheap scanner. We recommend the Logitech ScanMan.

Scanners are devices to digitize flat images and bring them into your computer. Corporate logos, for instance, can be very difficult to reproduce by hand. A scanned logo may only need brief cleanup before it is ready for use in your publication. You may use the images as they are, manipulate them graphically, or (with optical character recognition software) convert scanned text to ascii files.

The bad news is that scanners can be quite expensive. Flat-bed scanners give the best image, at the highest price. But handheld scanners can produce very acceptable images. We use the Logitech ScanMan to digitize small images.

The ScanMan has resolutions up to 400 dots per inch, and several controls to deal with the detail and darkness of the image you wish to scan in. Included is a painting program you can use to clean up the scanned-in images. For the price, this is a remarkable combination of hardware and software. It will not adequately reproduce photographs in most cases, but it will save the day if you need to use cartoons, logos, Chinese or Japanese characters, or small graphics. We were able to produce a T-shirt master (a desktop publishing application few people think of) in one hour because of the ScanMan. It is worth the street price of $149.

CONCLUSIONS

You can spend a lot of money to get started in desktop publishing. You can also start simply and then build up your hardware investment.

Remember that people are the most valuable part of your business. Make sure that those who will use the system take part in selecting the hardware. Buy hardware with local support; buy software where the price is best. Never buy anything without pricing it from at least three sources. If a smiling salesperson tries to intimidate you and suggests you shouldn't ask questions, walk out.

If you have never done desktop publishing before and this is your first exposure, *do not* buy anything. Go to a small desktop publishing shop and try out the equipment for yourself. Monitor resolution, processor speed and print quality are abstractions until you have experienced them. Even though it can be expensive to patronize a laser parlor, it will give you a concrete feel for what you need. It is worth every cent. ■

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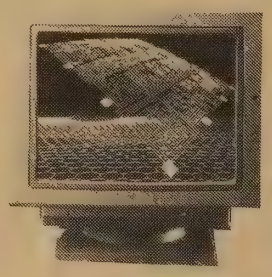

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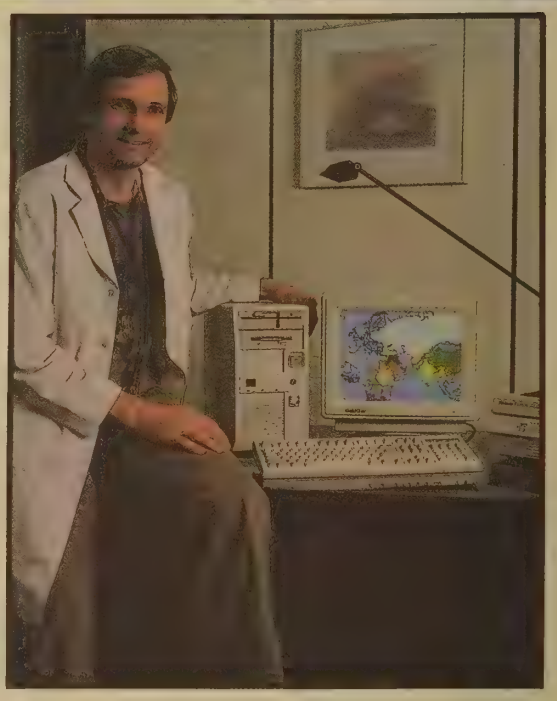

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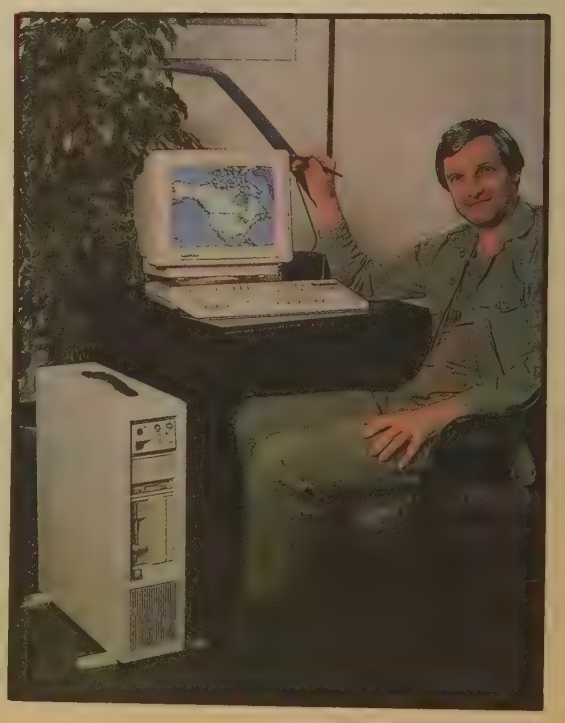

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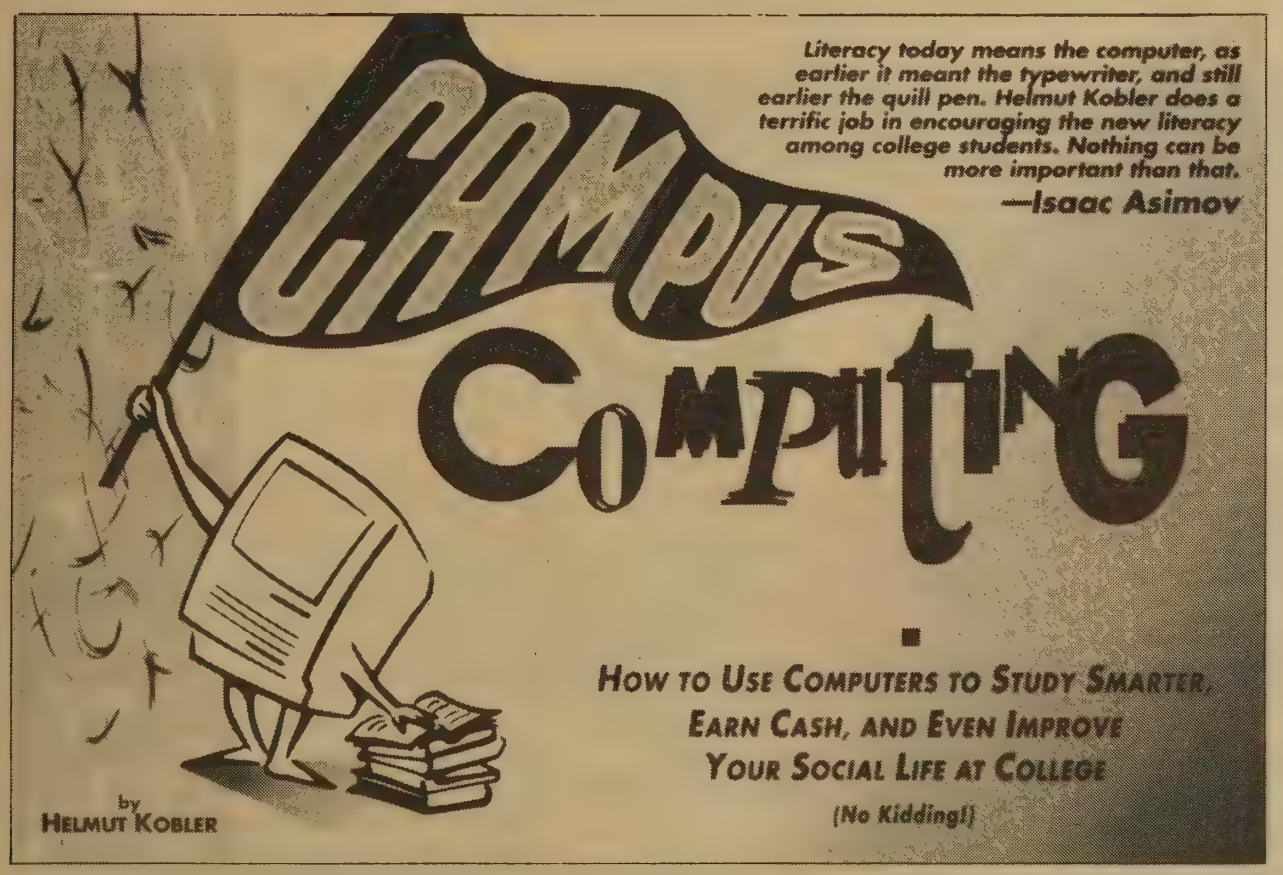
BY HELMUT KOBLER

In a classical Greek democracy, a whole city would converge to debate its issues in one place; today, you'll find a high-tech equivalent in Usenet, a huge, worldwide electronic discussion forum with a lot to offer students. You can chat about a wide variety of academic disciplines, from physics to Russian culture to poetry, or everyday topics like boating, travel and the Grateful Dead. Either way, if you're the type of student who can't stay awake in a droning lecture, but loves the give and take of a discussion, Usenet can be a thrill.

Through Usenet—which is a feature carried by networks of UNIX mainframe and minicomputers on campus—thousands of computer users exchange messages, as though they were exchanging electronic mail. But unlike email, this is a system where everyone is free to read and respond to Usenet conversations. The result is an electronic town meeting of about 150,000 people—some hailing from other countries like Great Britain, Germany, Australia and Mexico—who in their various conversations create about three thousand new messages each day.


Literacy today means the computer, as earlier it meant the typewriter, and still earlier the quill pen. Helmut Kobler does a terrific job in encouraging the new literacy among college students. Nothing can be more important than that.
—Isaac Asimov
CAMPUS COMPUTING
HOW TO USE COMPUTERS TO STUDY SMARTER, EARN CASH, AND EVEN IMPROVE YOUR SOCIAL LIFE AT COLLEGE
(No Kidding!)
by HELMUT KOBLER

Excerpted from Campus Computing, $8.95, ISBN 0-9626358-0-4, Lyceum Publishing, 2738 Parker St., Berkeley, CA 94704. (415) 841-7376. Campus Computing is written from a student standpoint, since its author, erstwhile MicroTimes *columnist Helmut Kobler, is a college student himself, majoring in history at the University of California, Berkeley.*

College student and longtime *MicroTimes* contributor Helmut Kobler, offers a wealth of info for the student in Campus Computing.

THE CONVERSATION SPECTRUM

You may wonder what there is to talk about with such a multitude of computer users. The latest in C data structures? VLSI chip design, or something equally stimulating? Usenet definitely has a good deal of computer chatter. The system got its start in 1979 as a network for computer scientists who wanted to talk about their work. Many of the people hanging around Usenet today are still in computer-related disciplines and professions, partly because to get to Usenet, you need access to a mainframe computer. And naturally, mainframes are more available to computer people than writers, economists or historians.

But despite Usenet's computer majority, its members manage to talk about much more than computers. Usenet is divided into electronic forums, called newsgroups, each with its own designated subject matter. Think of Usenet as an entire university, and its newsgroups as the various classrooms and lecture halls where English, economics, and biochemistry are taught.

As I write, in mid-1990, Usenet offers more than six hundred newsgroups, with subjects in just about every category that might relate to you as a student, or simply interest you as a curious, thoughtful person. Studying the

effects of the sun's ultraviolet rays on the precious ozone layer? You'll find astronomers, physicists, ecologists and plain old concerned citizens eager to exchange ideas. You may even find a scholarly audience to discuss the demise of illuminated manuscripts, and if you'd like to explore the philosophical implications of abortion or euthanasia, you're guaranteed to find an opinionated, vocal audience.

To give you a better idea of Usenet's breadth, here's a sample of newsgroup topics available:

- The space shuttle
- The environment
- Womens' rights and discrimination
- Physics, physical laws and properties
- Psychology
- African culture
- Biological sciences
- AIDS
- Issues related to men
- Genealogy
- Evolutionism versus creationism
- Middle Eastern events
- Religion
- Chess
- Tax law and advice
- Child behavior
- Logic, in math, philosophy and computers
- Legality and ethics of law
- Current events issues like drug testing and abortion
- Technical aspects of cars
- Books of all genres and the publishing industry
- Bicycles, related products and laws
- Soviet politics
- Vegetarianism
- Jokes (some tasteful, others...)
- Jazz, blues and other related music
- The Grateful Dead
- Chinese culture
- Baseball, and other major sports like football, basketball, skiing and scuba
- Poetry
- Statistics
- Job listings from around the country (mostly computer-related)
- Video technology and components
- Wood working
- Naturist and nudist activities

...and of course there's a healthy group of computer topics...

- Neural networks
- Artificial intelligence
- Computer architecture
- Computer graphics and animation
- Interactive video disks
- Every computer language around
- and just about all computer hardware, too

And if this sample seems a little exhaustive, remember that it represents only forty-two topics out of more than six hundred!

SMALL TALK, CHINESE DEMOCRACY AND COLD FUSION

The caliber of the discussions found on Usenet varies from one newsgroup to another. Some naturally digress into small talk; in another, the conversation may be too obscure to hold your attention—for instance,

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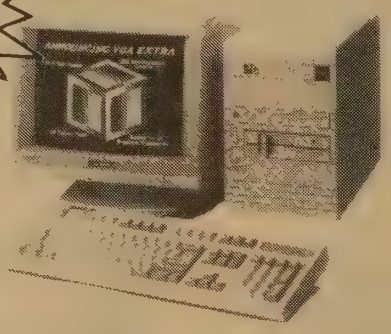

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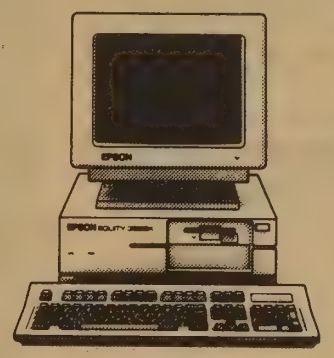

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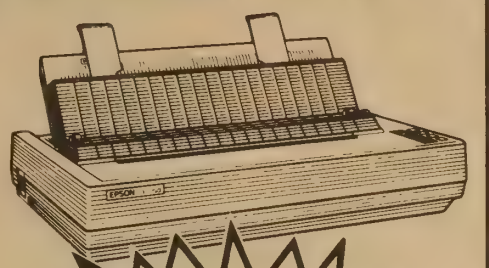

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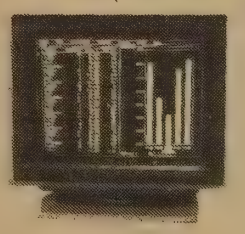

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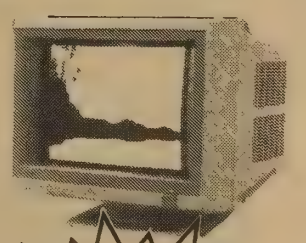

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you might find people debating bike tire pumps in the bicycle newsgroup, while you're more interested in talking about the Northwest's best mountain bike trails. Another problem is that in less used newsgroups, new messages trickle in only once every few days. This isn't rare for some of the more offbeat topics like folk dancing or soap operas.

Other news-groups can be real hotbeds, though. For instance, in the spring and early summer of 1989, people spiritedly discussed the political unrest in China and the student protests in Tiananmen Square. When the Chinese army cracked down in June, Usenet's Chinese culture newsgroup exploded. Dozens of new messages appeared each day from students, professors, Chinese natives, and anyone else concerned. On Usenet, in fact, people began to coordinate demonstrations, issue revolutionary statements, and make formal appeals to the US State Department.

Similarly, Usenet acted a bit like a scientific think-tank when two Utah scientists announced their discovery of cold fusion in 1989. Press releases were posted online, students and scientists across the country discussed the news, and a few researchers used Usenet to post their own evidence contradicting the findings.

NEWSGROUPS AVAILABLE THROUGH YOUR SCHOOL

One more note about the variety of Usenet newsgroups—since Usenet is available through school computers, your school gets to choose which of the system's six hundred or so newsgroups are actually available. This isn't censorship—it's just that Usenet's messages can take up a fair amount of your school mainframe's disk storage space. So some computer departments are selective about which of Usenet's newsgroups they want to keep, or rather to subscribe to.

Fortunately, I know of no schools that are spartan in their newsgroup selections. You should be able to find many of the newsgroups listed above, and more that are more or less in the mainstream's interest. Big schools especially, like Texas at Austin or Penn State, subscribe to the bulk Usenet. Unfortunately, when some newsgroups do have to go—at a smaller private college like Vassar, for instance—they're usually non-academic subjects like current events, baseball or religion. Chances are, though, that any four-year school will have a number of newsgroups that appeal to you.

GETTING STARTED WITH USENET

As mentioned earlier, Usenet is a feature carried by networks of UNIX mainframe computers (some mini, too) across the world. Besides doing real computer work, these mainframes exchange various Usenet messages written by their users.

For instance, let's say some student at Boston University posts his critique of *Die Hard II* in the movie reviews newsgroup. That message is actually stored on a B.U. mainframe. But perhaps once a day, the B.U.

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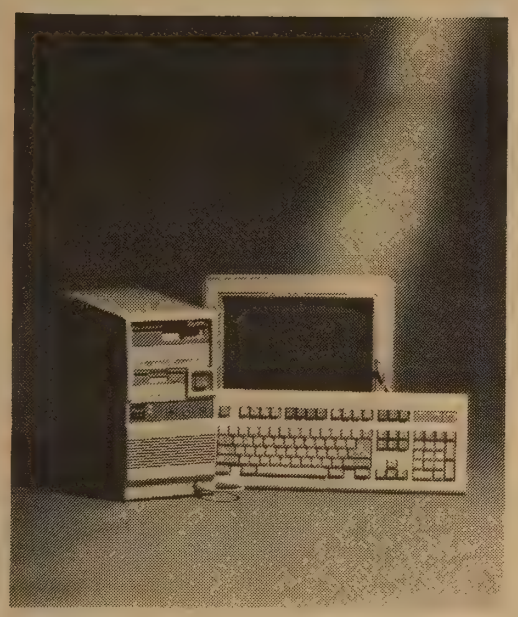

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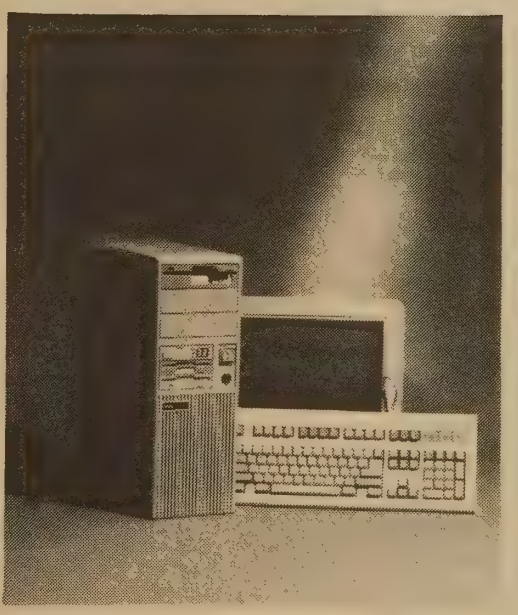

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computer calls a mainframe at M.I.T., and sends M.I.T. everything that B.U. students wrote that day.

Likewise, M.I.T. shares its latest messages, along with some it just received from Harvard and Boston College. This sort of exchange goes on among thousands of computers. While I'm over-simplifying the explanation, it's usually only a few days before most Usenet computers have the messages written across the entire network.

To read these messages, and write some yourself, you have to connect to a UNIX mainframe at school (they're pretty common). And to do this, you first need an account—a sort of membership—on such a machine. An account consists of a user ID, which is the name you'll go by on the computer (like **hkobler** or **dsmith**, for instance) and a password. Accounts are usually held by computer science and electrical engineering students whose classes require them to use the school mainframes, but even if you're a liberal arts type, you can often get an account through your school's computer science department

. With your fresh account, the next step is to log on to the mainframe by either calling it with your own personal computer from home (you'll get the appropriate phone number to use along with your account), or to reach it through an on-campus terminal that's hooked into the mainframe.

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MAKING THE FIRST CONNECTION

So you have your account, and you've logged on to a campus mainframe. Usenet's messages are waiting on that computer, but you have to use a special program on the mainframe that shows them to you. There are a number of different programs out there—**rn, read news, nn**—but rn is probably the most flexible and most widely used. Unfortunately, rn has a slight reputation for being complex—not unfounded, either—and there are a number of commands and procedures to know for getting around the system. I can't detail them all here, but I'll give you an overview of the fundamentals to get you started. (For all the details and steps, check out the Usenet chapter as it appears in full in *Campus Computing.)*

Anyway, at your mainframe's command prompt (usually a $, &, or % sign), type **rn**, which stands for read news, and hit return. Each time you start rn, the computer shows you the first five newsgroups available (notice the groups' official computer names, like **rec.autos** and **sci.astro**), and tells you how many new messages (officially called articles) have appeared in each one since you last checked:

Unread news in rec.autos 190 articles
Unread news in sci.astro 7 articles
Unread news in soc.culture.greek 6 articles
Unread news in soc.politics 224 articles
Unread news in sci.physics 11 articles

The next thing Usenet does is ask if you want to read the new messages, or articles, in each newsgroup available:

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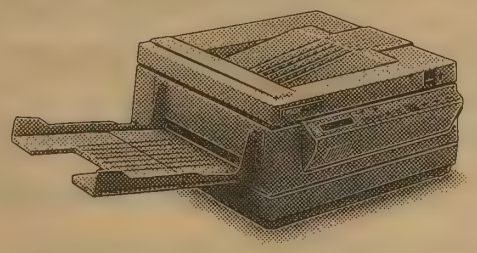

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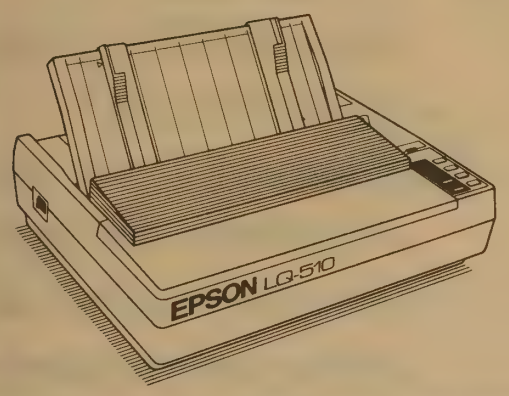

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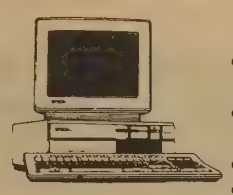

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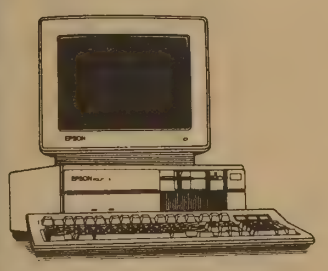

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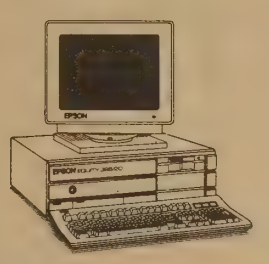

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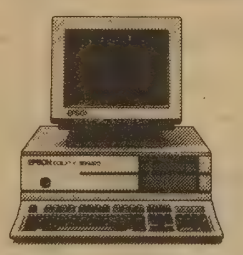

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********** 190 unread articles in rec.autos—read now? [ynq]**

SUBSCRIBING TO NEWSGROUPS

Usenet has hundreds of newsgroups, and you certainly won't be interested in them all. You might want to check out aeronautics, but have no interest in folk dancing. Unfortunately, when you start Usenet for the first time, the computer subscribes you to all of its newsgroups, and goes down the line, one group at a time, asking if you want to read what's new in every single one. It's tedious to cycle through perhaps hundreds of irrelevant newsgroups each time you use Usenet, so you'll want to tell the computer which ones you're interested in, and which you're not. To do this, answer **u**, for unsubscribe, to the groups you don't want, and **n**, for no, you don't want to read its articles now, but you still want to stay subscribed. Unfortunately, this can take an hour or so if you've been signed up for hundreds of newsgroups. When you come across the same newsgroups you selected, you can go on to actually read Usenet articles.

Once you've refined your subscription list, using Usenet through the program rn is a lot like using an electronic bulletin board or an online system like Prodigy or CompuServe. For example, you can get synopses of a newsgroup's article subjects by hitting = (equals sign) at any menu. In the astronomy newsgroup, for instance, you'd get something like this:

2073 Sun's ultraviolet rays
2074 UC Star club members
2075 Re: UC Star club members
2076 Newton and decaying orbits
2077 Re: Sun's ultraviolet rays
2078 Re: Hubble Scope Screws Up!
2079 Re: Newton and decaying orbits

What next? [npq]

To read an article, or a range, simply type in the number of the corresponding nunbers.

I don't really have a working knowledge of the Soviets' Space Station Freedom design, but how could any design call for spacewalks to change light bulbs and batteries? That's like designing a house so you have to climb out on the roof to change a ceiling light!

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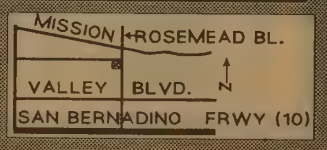

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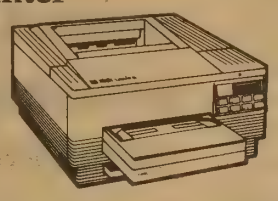

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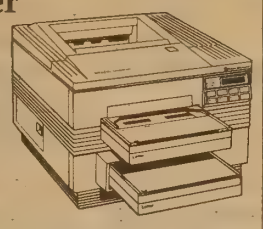

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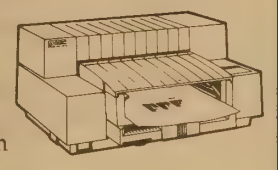

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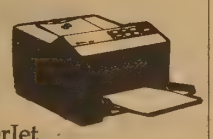

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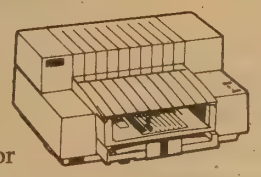

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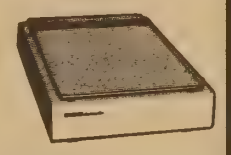

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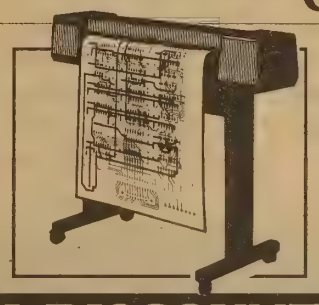

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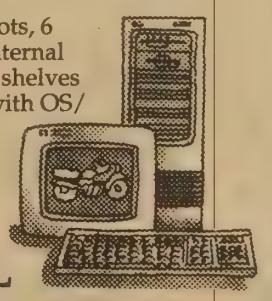

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For instance, typing 2076 gets you this:

Article 2076 in sci.astro:
From: DAEMON@CORY.BERKELEY.EDU (Daemon Virnau)
Subject: SPACE STATION FREEDOM
Message-ID: <8703300515.AA19549@ucbvax.Berkeley.EDU>
Date: 30 Mar 90 04:45:00 GMT
Sender: daemon@ucbvax.BERKELEY.EDU
Organization: The Internet
Lines: 6

I don't really have a working knowledge of the Soviets' Space Station Freedom design, but how could any design call for spacewalks to change light bulbs and batteries? That's like designing a house so you have to climb out on the roof to change a ceiling light! Is there some reason that this stuff can't be done from inside SSF? I guess that might add to problems involved with the air lock (getting stuff in and out), but wouldn't this be a decent trade off for 2000+ hours of spacewalks?

What next? [npq]

From here, you can move forward or backwards to articles by typing **n**, for next, or **p** for previous. If you want to reply to an article, just use **f**, for follow-up with your own remark. To jump to another newsgroup, make sure you're at the prompt asking if you want to read unread articles (**Read now?**) hit **g**, for go, and then the newsgroup's name—**g sci.shuttle**, for instance. For a list of all the newsgroups that you're not already subscribed to, hit **l** (in lowercase).

Typing **h**, for help, at any command prompt gives you a list of additional commands available. Don't expect a user-friendly response, though—rn's idea of "help" is to offer a long, long menu of bewildering commands and syntaxes.

But quitting Usenet is a cinch. Just continue to hit **q**, for quit, until you return to your mainframe's main command prompt. Here you can log off the system, use electronic mail, or do whatever else you'd like. ■

Unfortunately, when you start Usenet for the first time, the computer subscribes you to all of its newsgroups, and goes down the line, one group at a time, asking if you want to read what's new in every single one.

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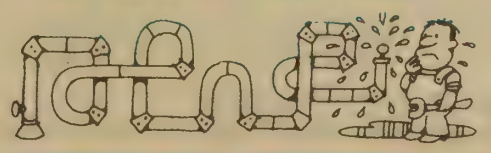

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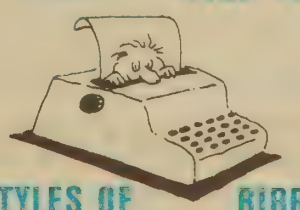

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Prodigy

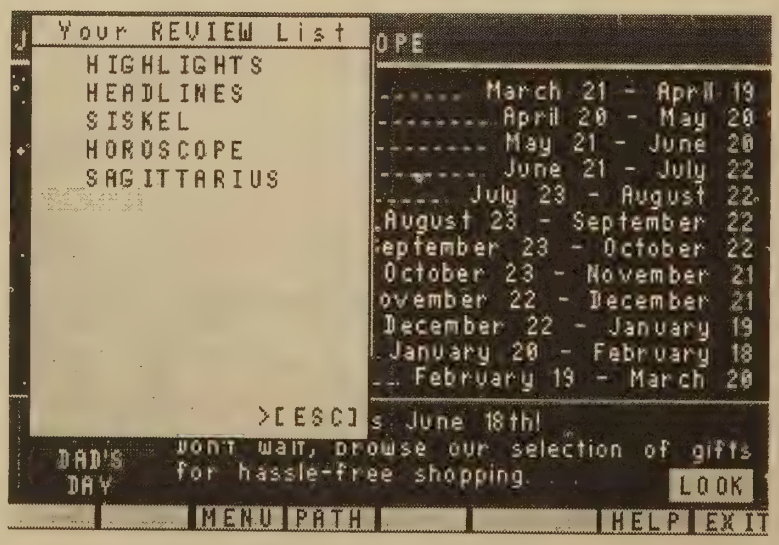
Low-Cost Online Service For Consumers

BY ED KAHN

Of all the facets of computer use, none is more overwhelming and confusing than telecommunications. Even experienced users wince at the mention of online services. And for good reason.

Computer and modem have to be in proper communication, and you have to have the right settings to allow a communication link to be established with a remote location. If something goes wrong, you often have to call in a friend or consultant with greater expertise, as the tiniest mistake will cause the whole process to fail. Even when you do make a good connection, there are other problems. And the learning curve is expensive as well as difficult; many services charge you by the minute of connect time, not to mention long distance charges.

Prodigy, a joint venture of IBM and Sears, attempts to solve these problems and create an online service that's inexpensive and easy to use. Prodigy charges a flat rate of $9.95/month for unlimited access to the service. Once you are on line, you have access to about seven hundred different conferences or services. Prodigy offers both information retrieval and activities. The result is an electronic mail/library all rolled into one.



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When you instruct your computer and modem to dial up Prodigy, you will be asked for your password. When the service connects, everyone gets the same opening screen which features news highlights of the day. From there, you can ask for more detailed information about any of the topics mentioned, or you can move immediately to the topics that interest you. Anyone can access any of the hundreds of topics and conferences, but each user can set up a unique path that brings up his or her favorite topics right in order. It is simple to abandon your pre-selected path and move about freely from topic to topic.

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takes you to a screen called Guide. Guide offers five big categories: News & Features, Living, Shopping, Money, Travel and Computers. When you choose any one of these, you will get another menu. On and on it goes until you finally reach one of the seven hundred topics you want. After a short time, you find yourself scooting around like you've been doing it all your life.

You can also bypass the menus and jump directly to any topic by typing the right label. The entire list is available online or in a booklet which Prodigy has.

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When users get into the service, they are routed to the places within Prodigy that most interest them: sports, financial services, weather reports from the home office, recordings, movie reviews, computer games, a computer column, recipes, education, consumer reports of home appliances, and travel tips that will be helpful in planning the summer vacation. It is also possible to book tickets through Prodigy. There is something for everyone.

Consumer Reports magazine maintains a number of different conferences, so you can easily check out hundreds of products on line. In effect, you have a huge library of past issues of *CR* available. For many products, after you have made a decision about what to buy, you can move on to actually order the product or service through a Prodigy vendor.

Prodigy is interactive. You can exchange electronic mail with anyone who is a Prodigy subscriber, as well as with some of the vendors. A discount brokerage firm allows you to execute stock transactions directly through Prodigy. You can also order things from Sears and other retailers and have the merchandise delivered directly to your home. Banking, grocery shopping, and a myriad of other products and services are also available.

Although Prodigy is a national service, certain nodes are local in order to accommodate grocery shopping and other businesses that must be local. This means that an Atlanta subscriber will have access to a slightly different mix of retailers than a subscriber in San Francisco. Prodigy is a lot more than information.

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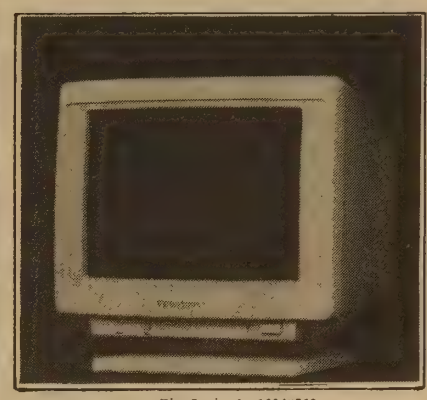

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Aamazing CM61428 14" VGA Monitor (Acer OEM 640x480,.28dp)	$315.00
Aamazing CM61428S 14" SuperVGA Monitor (Acer OEM,1024x768)	$360.00
Auva Loop P-1418A 14" Amber Monitor	$96.00
Auva Loop P-1418PW 14" Paper-white Monitor	$96.00
Auva Loop CT-1469 14" SuperVGA Monitor (1024x768,.28dp)	$325.00
Hyundai HMM-1200 12" Amber Monitor	$74.00
SamSung MZ4571 14" Flat Screen Paper White Monitor	$105.00
SamSung MZ4575 14" Flat Amber Monitor	$105.00
SamSung ML4571 14" Paper-White MonoVGA Monitor	$140.00
Mini-Micro MM1464K 14" RGB Color Monitor (SamSung OEM,.52dp)	$185.00
Samtron SC452 14" RGB Color Monitor (.52dp)	$185.00
ViewSonic 2v VGA Monitor (640x480,.29dp)	$315.00
ViewSonic 3 Auto-Tracking Multi-Frequency Monitor (1024x768)	$465.00
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NEC 2A SuperVGA 14" Monitor (800x600,.31dp)	$455.00
NEC 3D MultiSync 14" Monitor (1024x768,.28dp)	$615.00
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CS-12 Full size AT Case (3FDD/2HDD Openings)	$53.00
CS-101 Baby AT Case w/200W P.S.	$88.00
CS-601 Mini-Vertical Case w/200W P.S.	$88.00
CS-15 Mid-Vertical Case w/200W P.S. (Digital)	$130.00
CS-901 Mid-Vertical Case w/230W P.S. (Digital)	$155.00
CS-747 Full Vertical Case w/230W P.S. (8HH Openings)	$155.00

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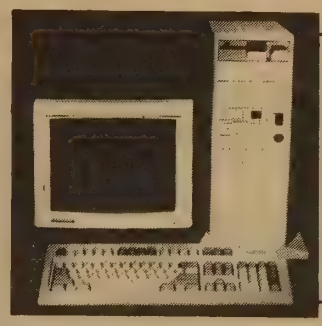
Mini-AT 200W Power Supply (XT size)	$45.00
AT-200W Power Supply (Full size)	$53.00
PS-2 200W Power Supply (for CS-101 or CS-601 Case)	$45.00



ESSENCE 386-25 System $1060.00

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* Super Mini Vertical Case (shown)
* Keytronic 101 Keys Keybaord
* 1MB Memory on Board
* One TEAC 1.2M Floppy Drive
* 2 Serial / 1 Parallel
* 200 Watts Power Supply
* Page Interleaving / Shadow RAM

Essence 386-25 (64K Cache) System $1280.00
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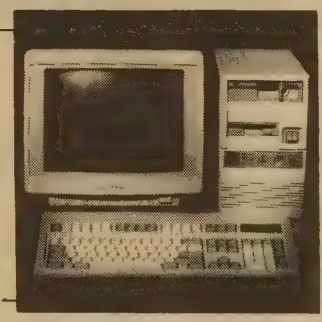

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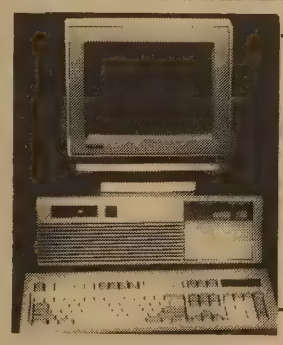

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* Keytronic 101 Keys Keyboard
* 512K Memory on Board
* One TEAC 1.2M Floppy Drive
* 2 Serial / 1 Parallel
* 200 Watts Power Supply

Essence 286-16 AT System $470.00

** Mini Vertical Case +$10.00

ESSENCE 88-10 XT System $275.00

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* Expandable to 640K
* AT-jr Case
* Enhanced 101 Keys Keyboard
* 512K Memory on Board
* One TEAC 360K Floppy Drive w/FDC
* 150 Watts Power Supply

Monitors, Video Cards, and Hard Disk Subsystems, use the prices below. Please call for System Memory upgrade.

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Lite-On Enhanced 101 Keys Keyboard	$35.00
Keytronic KB-101 101 Keys Keyboard (U.S.A.)	$48.00
Fujitsu KB-4700 101K Keys Keyboard (Japanese)	$48.00
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Focus 3001 101 Keys Keyboard w/Calculator (Click)	$55.00
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Logitech C9 Hi-Res Bus Mouse	$82.00
Genius GM-6X Serial Mouse	$30.00
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Panasonic KX-P4420 Printer (4ppm/512K/300dpi)	$955.00
Panasonic KX-P4450i Laser Printer (11ppm/512K/300dpi)	$1375.00
Colorado Memory System DJ-10 40-120MB Tape Backup	$255.00
Colorado Memory System AB-10 Tape Backup Adapter Kit	$80.00
Colorado Memory System KE-10 Tape Backup External Kit	$115.00

All parts and systems carry a One Year Limited Warranty except monitors and printers which warrant by manufacturers. All returns are subjected to our approval and must have prior authorization. Return items must be in its original condition, send shipping prepaid. All refunds or credits are less shipping and bank charges. All refund items must be returned within 14 days of invoice. There will be a 20% restocking fee after the 14 days period and within 30 days of invoice. Thereafter, only exchange are available during the rest of the warranty period. Price, Specification & Availability subject to change without any notice. TERM: C.O.D. $3.50 per package.

Hard Disk Subsystem Upgrade:

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20MB (62ms)	+$222.00
40MB (28ms)	+$250.00
65MB (25ms)	+$333.00
80MB (25ms)	+$475.00
100MB (25ms)	+$560.00
120MB (18ms)	+$643.00
150MB (18ms)	+$865.00
200MB (18ms)	+$895.00
300MB (18ms)	+$1590.00

Monitor + Video Upgrade:

12" Monochrome Monitor w/MonoGraphics Card	+$98.00
14" Monochrome Monitor w/MonoGraphics Card	+$119.00
14" RGB Color Monitor w/ColorGraphics Card	+$215.00
14" Amazing CM8439 VGA Monitor w/PVGA-1024 (256K)	+$380.00
14" ViewSonic 2v or Aamazing CM61428 VGA Monitor w/PVGA-1024 (256K)	+$410.00
14" Auva Loop SuperVGA Monitor w/PVGA-1024 (256K)	+$420.00
14" ViewSonic 4 Multi-Frequency Analog Monitor w/PVGA-1024 (256K)	+$460.00
14" ViewSonic 3 Auto-Tracking Multi-Frequency Monitor w/PVGA-1024 (512K)	+$505.00

instance, you will currently have to make a long distance call to access the service. So the future of the service depends upon its availability in more cities across the country.

IS IT FOR YOU?

If all of this is available at such a low cost, why does anybody bother with the expensive services? Is it time for CompuServe to close up shop?

Not quite. The focus of more traditional services is a good deal different from Prodigy's. For instance, if you ask for stock quotations on Prodigy, you will actually be accessing a portion of the Dow Jones News Retrieval Service—but only a small portion of what that service has to offer. You are essentially limited to business headlines and stock quotes. While the information you get is the same as from the parent service, the interface has been tailor-made for Prodigy. You have no way of knowing that you are accessing anything other than Prodigy, but you are severely limited in your access to the other service.

You cannot see into the pages of the *New York Times* or get corporate business statements through Prodigy, even though Dow Jones News Retrieval offers them. You get only what Prodigy has signed up for.

Likewise, there is no downloadable database accessible through Prodigy. Computer software is for sale through vendors, but there is no downloadable shareware or public domain library. There are no computer special interest groups. There are, however, conferences available where you can express your opinions on a wide range of subjects.

In some way, Prodigy is like the old-fashioned party line in that you can learn what others have to say on a subject and put in your $9.95's worth.

The major drawback of Prodigy, however, is its speed. Although you can access it with a 2400 baud modem, it is still frustratingly slow. At 1200 it is too slow for my limited patience.

Prodigy's log in screen shows you a daily list of new information.

Magazines and newspapers are filled with introductory offers for Prodigy. I got a mailer offering me a free 30-day trial. My phone call in response to the offer got me a kit containing the software and a code that allowed me to sign on. After that, just like clockwork, I got a bill every month for $9.95. Other offers, available in computer stores, even have an inexpensive modem as well as an introductory offer in the package. Prodigy wants to acquire a huge customer base and is willing to go the extra mile to make you part of it.

Prodigy wants to go where no company has successfully gone before. They want you to use Prodigy as a newspaper, store, library and amusement center. If you live in a city where Prodigy is available it may well be worth taking a test drive. ■

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FX-1050	WIDE	264/54 NLQ	CALL
LQ-850	STD.	264/88 LQ	CALL
LQ-950	MEDIUM	264/88 LQ	CALL
LQ-1050	WIDE	264/88 LQ	CALL
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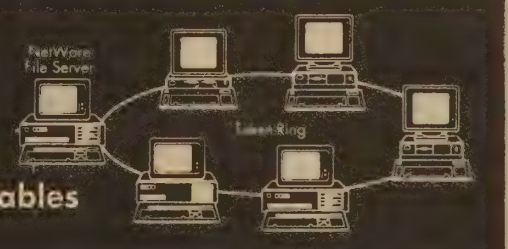

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America Online

AppleLink For The Rest Of Us?

BY MIKE MARKOWITZ

Anyone with a computer, a modem and a reckless disregard for the cost of installing additional phone lines can start a bulletin board, but starting a new commercial online telecommunications service takes massive chutzpah and serious venture capital. The barriers to entry are not quite as severe as, let's say, starting a new automobile manufacturing company, but the market is dominated by a few big players like CompuServe and GEnie.

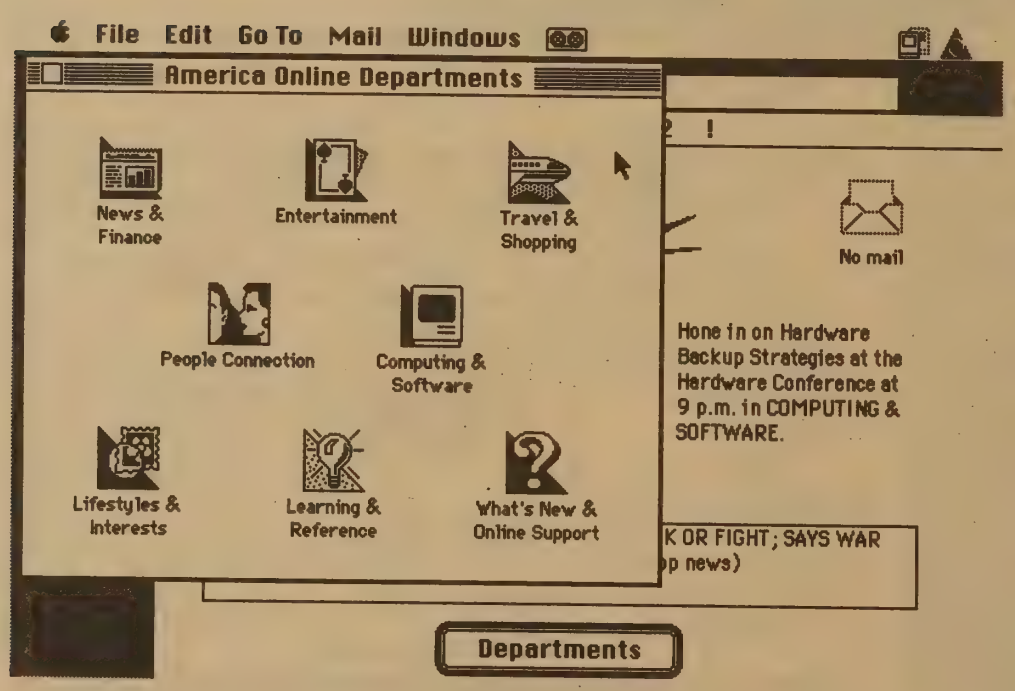
Last year The Source, one of the pioneer online services, was bought out and terminated by CompuServe. Prodigy, a service backed by the might of Sears and IBM, has reportedly invested hundreds of millions of dollars in startup costs, without a whiff of profit in sight. This is not a market for the timid.

A few years ago, Quantum Computer Services, Inc. (no relation to the disk drive maker), based in Vienna, Virginia, tarted a successful online service for Commodore users. In 1987, Quantum inked a deal with Apple to establish "AppleLink Personal Edition" a consumer-oriented version of Apple's own internal email system. Initially, this was limited to an Apple II interface. The Macintosh software apparently had a long, stormy and troubled development cycle.

Last year, Apple pulled out of "AppleLink Personal Edition," reportedly because of Quantum's plans to launch a service for PC users. Renamed "America Online," (AO) the service now sports a stylish Macintosh interface, a rich set of features and a growing population of The Rest of Us.

Quantum officials are unwilling to reveal total AO membership. It certainly numbers in the thousands, but I have never experienced any difficulty accessing the system. There seem to be fewer long delays and crashes than I experienced on competing systems when I used them regularly (Southern California phone lines have notoriously poor data transmission quality). Most of the original beta-test group of Apple II enthusiasts are still active on AO, many as Mac users, which can be regarded as a true vote of confidence in the service.

America Online insulates the user from the mechanics of telecommunication. Conventional online services are based on the model of a dumb terminal connected to a host. Communication, in both directions, is limited to a stream of text and a few basic control characters. AO's software, on the other hand, knows it is talking to a Macintosh. It can respond to mouse-clicks and menu selections. It can tell your computer to display windows and icons of various kinds, play digitized sounds, and generally behave like a Mac.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America Online offers a wide range of services and activitites.

GETTING STARTED

Setup is extraordinarily simple. You need a Mac Plus or later CPU, a Hayes-compatible modem, and a phone line. For users with a color system, there are functional and attractive color graphics. A hard disk or a second floppy is convenient, if you intend to download files.

The AO program disk confirms your equipment setup and dials a special toll-free number. You then select a local Tymnet or Telenet node as your regular dial-up number. You select a password, a "screen name," or user ID, and a billing option (MasterCard, VISA or direct checking account deduction, with a $2 monthly service charge). If you run into trouble, a toll-free help line, manned by courteous, competent human beings, is always at hand. There is even a toll-free Customer Relations teletype line for hearing-impaired members.

In California I counted about fifty-eight local numbers for 2400 baud connection, and 137 numbers for 300/1200 baud connection, so unless you live in a fairly remote area, dialing into AO is a local call.

The monthly membership fee is $5.95. A colorful thirty-page monthly "program guide" is mailed to members. Connect time is billed at two different rates. "Non-prime time," from 6 pm to 6 am on weekdays and all day on weekends and certain holidays, is $5 per hour. Prime time includes everything else, and costs $10 per hour. Users in Alaska, Hawaii and Canada incur a surcharge of 20 cents per minute (or $12/hour—ouch!). Rates are the same whether you connect at 300, 1200 or 2400 baud. Modems above 2400 baud are not supported.

SERVICES

A good Mac interface usually provides several different ways to do something, so AO

RESOURCES:

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AST Advantage/2 512K	99
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offers a variety of navigation tools. You can type a "keyword" to go directly to a specific area, select from a menu or click on an icon. There is extensive "cross-referencing" to ease the job of exploring this large data space. Different functional areas are represented by icons on an opening screen:

Computing and Software—this includes Apple II and Macintosh special-interest forums, public-domain libraries, and "Industry Connection," a series of bulletin boards operated by software and hardware vendors.

People Connection—a classic interactive "chat" or online conference area. You can create private "chat rooms" for small groups, ignore someone, or locate someone. Depending on the time of day, the public chat areas tend to be dominated by teens discovering the thrills of online socializing.

Travel and Shopping—includes an online travel agency, EAAsy SABRE (for airline reservations), Comp-U-Store, a buying service that lists over 250,000 discounted products, and LaserDirect, a printing service.

Entertainment—includes online games, music and movie reviews, horoscopes, and comedy.

News and Finance—wire service news and weather reports, stock exchange quotations, sports, technology and opinion ("Express Yourself").

Lifestyles and Interests—an ever-changing collection of special interest and hobby forums.

Learning and Reference—includes an encyclopedia, tutoring center and online courses of various kinds.

What's New and Online Support—free of charge during non-prime hours, this area includes notices of new or noteworthy activities, customer relations hotline and member directory.

Electronic mail ("The Post Office") is accessible from within any area. You can send almost any kind of file by mail, not just text messages. You can easily download incoming mail to read offline. You can also compose your messages offline to save on connect charges. The AO Macintosh software includes a copy of StuffIt, the standard Mac file-compression utility. Apple II users can download Shrinkit, the new ProDOS file compression shareware standard from the Apple II utility forum.

Downloading files is relatively painless. A bar graph indicates the time remaining, and a cheery digitized voice announces "File's done!" so you can do something else while the download chugs along.

Unlike some online services, where the Heavy Hand of Censorship has been known to Rear Its Ugly Head, AO's management shows an admirable respect for freedom of electronic speech. Or maybe Apple II and Mac users are just wimps who never write anything seditious, obscene or offensive.

THINGS WE'D LIKE TO SEE

AO is certainly not perfect. I'd like to see gateways to other important electronic mail systems, particularly MCI Mail and the "real" AppleLink. I'd like a way to download an entire folder (a "thread" of discussion) at once, rather than each item as a separate file. The Apple II community would love to see a native IIGS version of the AO software, rather than the present 8-bit "MouseText" inter-

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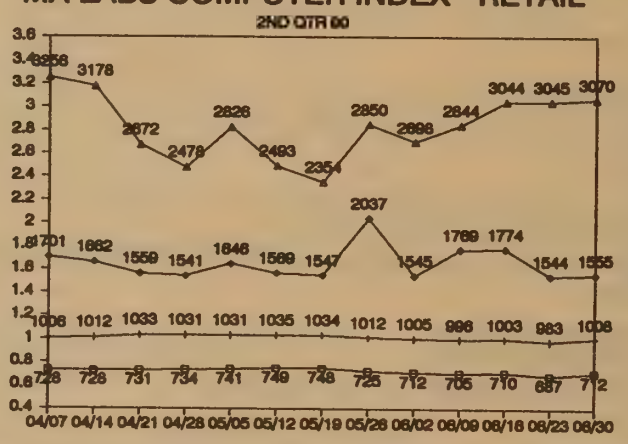

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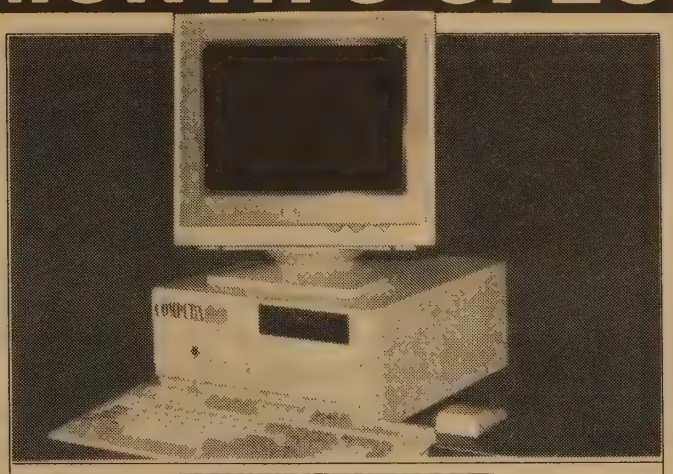

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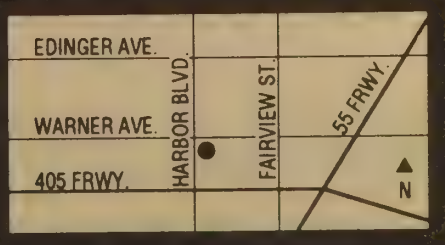

face, but the management seems to have categorically rejected this idea.

EVALUATION

I asked some friends and colleagues who use the service for their opinions about America Online.

A TYPICAL EVENING

One way to convey the variety of AO is to sample a typical evening's activity. Here's Sunday, June 3, 1990:

8:00 Apple II: Education (CONF) Hypermedia: Ideas to Make It Work in Your Classroom
8:00 Macintosh: Music and Sound (CONF) Getting Started with Mixing Boards
9:00 Apple/Mac Beginners' (CONF) Join Joey As He Hosts AFL Sandy B's Birthday Party Online
9:00 Mac/Apple: User Group (CONF) Join Us for a "How To" Discussion
10:00 (CENTER STAGE) Join the Tangled Web of Fun During America Online's Trivia Game Show!
10:00 SPORTS CHAT Take a Swing at Our Favorite Sports Topic with "Bill72236"

A veteran Macintosh programmer and hacker said: "I really like it. In fact, I like it so much that I've virturally quite using GEnie and CompuServe and spend all my commercial time here."

An experienced bulletin board sysop and telecommunications guru complained: "The forum leaders, to me, seem very cutesy in their responses, and what it says to me is that they do not especially know what they are talking about. If I had a tech support type question, I sure wouldn't ask it on AOL. If I wanted to bitch about something, or show the world how cool I was, then I'd use AOL to do so."

On the positive side, he added: "I think AOL is a good place to start with telecomm. It's a system for novices. After people get their feet wet, they can graduate to the real systems. On GEnie and CompuServe, one of the biggest movements of late has been 'off-line processing.' Accomplished thru macros or 'front ends' to macro-driven type programs, they let you get on and off real quick, prepare downloading lists offline, and in general, just make using those services much more efficient. Even though CompuServe is over twelve bucks/hour, using TIC and Co-Pilot, I bet it actually costs less to use..."

To get a woman's perspective, I asked a Macintosh graphic artist and consultant, who noted: "When my profile had me listed as a single person, there were guys from all over the country sending me instant mail online (obviously trying to pick up on me). I have since changed it to say nothing, and that problem stopped."

America Online is a good choice for beginners who are interested in learning about telecommunications. It may lack the depth and coverage of the longer-established CompuServe and GEnie services, but it has a lot more substance, and a much better interface than the lower-cost Prodigy.

A growing number of important players in the Macintosh universe are showing up on AO—publications, vendors, opinion leaders. It is a particularly good value for thousands of users who work with both Apple II and Macintosh systems. ■

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Voice Hijacks The Information Age

The Uncharted World Of Audiotex

BY BROCK N. MEEKS

While few of us were looking, the information age was hijacked. Industry pundits thought hi-tech modems, screeching their carrier tones late into the night, would set the precedent for the "info-revolution." They were wrong. A much maligned low-tech device is now taking the information age by storm. It is a device more common than the fax machine and only slightly more difficult to operate than a television. And it's sitting not more than four steps away from anyone reading this column: the telephone.

Bored? Lonely? Curious? Just press "976-Anything" and you're transported into the fiber-based world of "audiotex." Using a system so simple a five-year-old can access stock quotes or a White House press briefing, purveyors of the 976 industry (and their long-distance siblings, the 900 number services), have succeeded where the online, computer-driven videotex market has failed.

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You can already hear messages ranging from New Kids On The Block to Santa Claus. And with audiotex, not only is the medium the message, it can also be the massage.

IN THE BEGINNING THERE WAS PHONE SEX

Contrary to Richard Gere's line in *Pretty Woman*, you can't find a Julia Roberts look-alike by dialing 976-BABE. You can, however, get an earful of moans and groans otherwise available any night in a cheap hotel with thin walls. The advantage of the hotel is that you know the cost up front; with audiotex, the most you can expect is a Really Big Phone Bill.

Like the transition of the porno industry from 25-cent peep shows to $25 bring-home video tapes, providing an earful from a phone call turned out to be a goldmine.

The phone sex industry had its humble beginnings back in 1986 when *High Society*, a New York-based skin mag, set up an answering machine that played a message promoting the magazine's "coming attractions." The voice was seductive, the messages slightly tantalizing, and the response overwhelming. Thousands of calls began streaming into the upper Manhattan exchange. Soon the magazine added more answering machines and turned the messages into "adult fantasies."

It wasn't too long before the numbers began showing up on bathroom walls: the scheme was a hit. And at its peak, the magazine has over a hundred answering machines cranking out fantasies, all recorded by the husky-throated publisher, Gloria Leonard.

When the sex chat scheme went national, with 976 numbers, the controversy also took off. Middle America wasn't ready for its kids to get their sex education by telephone. And good ol' wholesome Ma Bell came under sudden attack for profiting (greatly) from people providing these sexually explicit services.

The controversy that ensued caused a number of responses. The phone companies, in an effort to stall the masses from storming their corporate offices, banished all "undesirable" services to different exchanges. Others offered to block any particular exchange.

But the First Law of Pornography states that smut can neither be created nor destroyed—it simply changes form. Thus, many local 976 adult lines have become national 900 lines. But industry experts expect most of the growth in audiotex over the next few years to be in non-explicit 900 services.

AUDIOTEX: A NEW FORM OF PUBLICATION

Magazines and newspapers are natural players in the audiotex game, since they already are in the information business. The *New York Times* provides a 900 service that gives as many as three answers to its crossword puzzles (which should tell you something about the American public). I'd like to see a service that gave three hints about solving world hunger or the homeless problem or my local garbage dump.

All this listening makes for fast bucks. Fast, dumb bucks—some services are just plain stupid; some services give incredibly mind-numbing advice, such as the Pet Line: "Wild animals rarely make good house pets." Some live and die faster than you can be billed for them. (Make no mistake, though, you will pay for the calls.)

A CALL FOR STANDARDS

If all this sounds like it was tailor-made for the likes of P.T. Barnum and any ilk of con man, you're right. But the Information Industry Association, the group that lobbies Congress

Using a system so simple a five-year-old can access stock quotes or a White House press briefing, purveyors of the 976 industry (and their long-distance siblings, the 900 number services), have succeeded where the online, computer-driven videotex market has failed.

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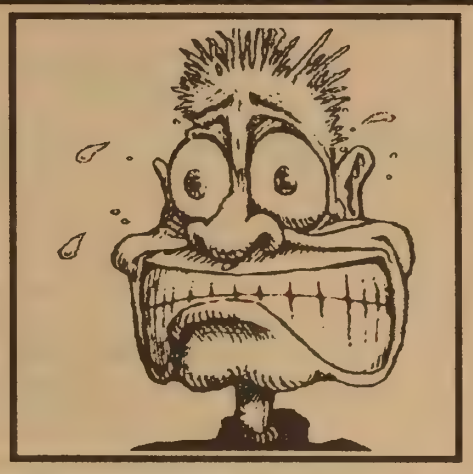

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in behalf of this group, doesn't want you to think so. They'd like you to believe the entire industry is forthright and upstanding. Truth is, it's caller beware.

The IIA has drafted what it *hopes* will become accepted as a standard of practice. A spokesman for the IIA told me: "We've developed these 'Standards of Practice' as a voluntary guideline. There's nothing hard and fast here. They're intended to serve as a guide to create the conduct which experience has shown to be wise, foresighted and constructive."

For who? The facts are, there is no regulation on this group; there might never be. Take a look at the proposed standards and read between the lines:

Preamble: Those services which offer information and entertainment programs shall strive to present programs which are innovative, timely, thought-provoking, creative, intelligent and factual. We recognize that these services are, in most instances, universally accessible, and thus great care must be exercised as to content. Particular attention is to be paid wherever children may be involved. We recognize that we have a special responsibility towards children.

•The presentation of violence, either physical or psychological, shall not be exploitative or excessive, and shall truthfully present the consequences. The use of violence for its own sake shall be avoided. In general, the treatment of violence or associated criminal activities shall always convey the negative social and human effects.

•Except for truthful and factual information, any presentation dealing with narcotics or the use of illegal drugs shall highlight the destructive elements and discourage use.

•The invitation to participate in or otherwise encourage the promotion of any illegal action by others shall be avoided.

•Demeaning or disparaging remarks shall be avoided.

•Specific attention shall be observed to refrain from the use of obscene, indecent or profane language as defined by applicable federal and/or state law.

•The presentation of any matter dealing with sexual material shall be treated with discretion and sensitivity. Special care shall be taken to avoid exploitative or irresponsible themes.

•Programs offering professional advice or self-help material shall be presented in conformity with law and recognized professional standards. Explicit care shall be exercised to prevent false expectations.

•Programs shall avoid false or misleading statements, visual or verbal.

•Contests shall be conducted in accordance with all applicable laws.

•Programs dramatizing current affairs or social issues shall be presented as dramatizations and care shall be taken to inform the caller that the program is a dramatization, not a real news story.

•News reporting shall be factual, fair and unbiased.

•Editorials, commentaries and analyses shall be so identified.

•Political, fundraising or religious programs shall be clearly identified as such. ■

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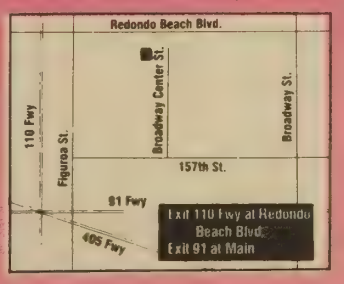

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286-12

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286-16

MONO (720x350)	VGA (640/480)	Super VGA (1024X768)
$900.00	$1125.00	$1225.00

Baby Case/200W Power Supply, 2 Ser/1 Par/1 Game, Clk/Cal. 1.2 MB Teac Floppy Disk Drive, 1.44 MB Teac Floppy Disk Drive. Dual Hard & Floppy Drive Controller, 40 MB Hard Disk/28 MS Access Time, 1 MB RAM, Fully Assembled and Tested. One Year Warranty. Free Public Domain Software!

386SX

MONO (720x350)	VGA (640/480)	Super VGA (1024X768)
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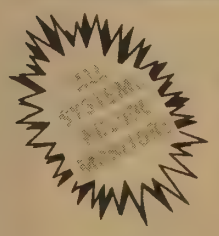
Baby Case/200W Power Supply, 2 Ser/1 Par/1 Game, Clk/Cal. 1.2 MB Teac Floppy Disk Drive, 1.44 MB Teac Floppy Disk Drive Dual Hard & Floppy Drive Controller, 40 MB Hard Disk/28 MS Access Time, 1 MB RAM, Fully Assembled and Tested. One Year Warranty. Free Public Domain Software!



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MONO (720x350)	VGA (640/480)	Super VGA (1024X768)
$1425.00	$1650.00	$1750.00

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386-33

MONO (720x350)	VGA (640/480)	Super VGA (1024X768)
$1700.00	$1925.00	$2025.00

Mini Vertical Case/200W Power Supply, 2 Ser/1 Par/1 Game, Clk/Cal. 1.2 MB Teac Floppy Disk Drive, 1.44 MB Teac Floppy Disk Drive. Dual Hard & Floppy Drive Controller, 40 MB Hard Disk/ 28 MS Access Time, 1 MB RAM, Fully Assembled and Tested. One Year Warranty. Free Public Domain Software!

486-25

MONO (720x350)	VGA (640/480)	Super VGA (1024X768)
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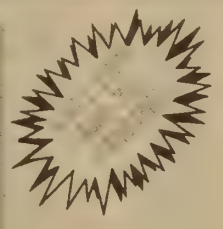
Drive, Dual Hard & Floppy Drive Controller, 40 MB Hard Disk/28 MS Access Time, 1 MB RAM, Fully Assembled and Tested. One Year Warranty. Free Public Domain Software!



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Conference registration is $950, and space is limited. The trade show and hands-on demonstration area will feature over 250 vendors and takes place October 3-5. For registration and further information, contact Seybold Seminars, (213)457-5850.

CONFERENCE SCHEDULE

TUESDAY, OCTOBER 2

■ 9-10:30 AM

Publishing & Computing in the '90s
Opening presentations
Moderator: Jonathan Seybold
John Warnock, Adobe
Bill Gates, Microsoft
Steven Jobs, NeXT

■ 11 AM-12:30 PM

Publishing & Computing in the '90s (continued)
Moderator: Jonathan Seybold
Howard Woolf, Digital Equipment Corporation
James Lennane, DeScribe

■ 2 PM-3:30 PM

Computing Environments for Publishing
Moderator: Craig Cline
Scott McNealy, Sun Microsystems
J. Paul Grayson, Micrografx
Charlie Oppenheimer, Apple Computer
Lucy Baney, IBM

Color Technologies 1
Color Portability & Color Space
Moderator: Jonathan Seybold
Brian Jordan, Crosfield
Jim Kneeland, Kodak
Efi Arazi, EFI
Fred Schwedner, Adobe

■ 4 PM-5:30 PM

Future of PostScript
Moderator: Jonathan Seybold
John Warnock, Adobe
Cal Bauer, Microsoft
Paul Brainerd, Aldus
Bob Downs, Phoenix

Publishing Without Paper:
Multimedia/Interactive Retrieval 1
Moderator: David Baron
Payson Stevens, InterNetwork
John Scull, MacroMind

WEDNESDAY, OCT 3

■ 8:30-10 AM

Color Technologies 2—Color Screening & Output
Moderator: Jonathan Seybold
Georg Pfeiffer, Hell
Stephen Schaffran, The Color Group
Lars Borg, Adobe
Tim Gill, Quark

Publishing Without Paper 2
Moderator: David Baron
Charles Goldfarb, IBM
Jack Butler, Butler Graphics
Kathleen Wilson, Bank Street College

■ 1:30-3 PM

Video Technologies Tutorial
Moderator: David Baron
Rob Cook, Light Source
Steve Vollum, E-Machines
Scott Billups, Billups Communications

Color Output Tutorial
Moderator: Jonathan Seybold
David Spencer, David Spencer & Associates
Paul Beyer, JCH Color

Publishing Environments: The User's View
Moderator: Craig Cline
Peter Jerum, Novell
Brian Anderson, ACP/Contex

Standard for Electronic Information Interchange
Moderator: Mark Walter
Joanna Vanderwilt, Boeing
Bob Travis, Digital Equipment Corporation
Yogen Dalal, Claris
Yuri Rubinsky, SoftQuad

■ 3:30-5 PM

Building Systems (Case Studies)
Color Production
Moderator: Craig Cline
Drew Robbins, All Systems Color
David Lynn-Overbey, CATPRO

Newspapers and Magazines
Moderator: Bill Solimeno
Don Skaggs, *Worcester Telegram & Gazette*
Marcel Corderch, *El Sol*
Tamara Westmark

Color Tradeshops vs. Desktop Production
Moderator: Jonathan Seybold
Ray Hammond, The Last Word
Sanjay Sakhuja, Digital PrePress International

Marketing and Advertising
Moderator: Kevin Howard
Bruce Kaplan, Mind Over Macintosh
Elizabeth Wood, Egelin, Wood & Zuber,
Electronic Publishing & Design Center
Michael Astrachan, Kuhn & Wittenborn

■ 7-9 PM

Font Free-for-all, 4th ed.
Moderator: Peter Dyson
Eliyezer Kohen, Microsoft
Günter Zorn, Linotype
Louise Domenitz, Bitstream
Cynthia Hollandsworth, Agfa/CG
David Berlow, The Font Bureau

Color Free-for-all, 1st ed.
Moderator: Jonathan Seybold
Ray Hammond, The Last Word
Brian Jordan, Crosfield
Mike Templeman, Aldus
Alan Darling, Quad Graphics

THURSDAY, OCTOBER 4

■ 8:30-10AM

Color Technology - 3 Compression
Moderator: Jonathan Seybold
Alain Rossman, C-Cube
Eli Israeli, Scitex

Workgroup Applications & Environments
Moderator: Craig Cline
Jamie Lewis, Clarke Burton Corp.
Phil Gilbert, Gilbert & Associates
Tim Gill, Quark

■ 10:30 AM-12 NOON

Design and Production Links
Moderator: Jonathan Seybold
Greg Galle, Aaron Marcus and Associates
Roger Black, Roger Black Inc.
Lance Hidy, Lance Hidy Associates

Corporate Publishing: Keeping
Afloat in a Sea of Information
Moderator: Mark Walter
Dennis Andrews, Xerox
Geoff James, Digital Equipment Corporation
Chuck Cooper, IBM

■ 2-3:30PM

Closing Presentation
Paul Brainerd, Aldus
David Liddle,

Metaphor **Conference Overview & Wrap-Up**
Jonathan Seybold

■ 4-5:30 PM

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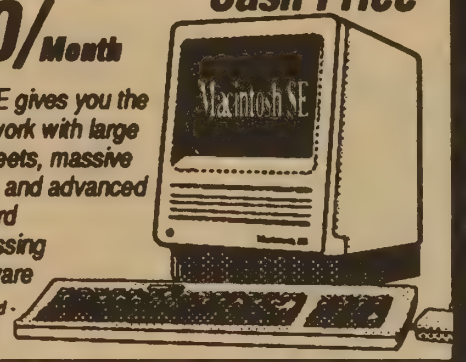

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Macintosh SE/30

$105/Month 2 Mb RAM FREE! keyboard extra.

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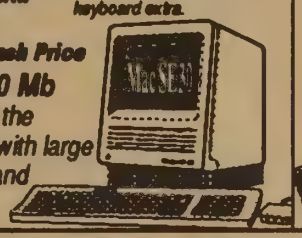
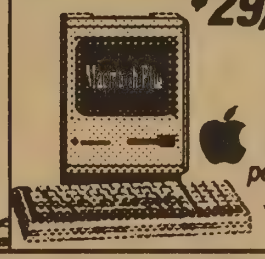


Macintosh Plus

$29/Month



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Mac Plus—the perfect business solution for the home office.

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The incredible Microtek 300Z - 300 DPI Full color scanner for Macintosh or PC Compatible **$1997**

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PLI 45Mb removable drive cartridge system. Add cartridges to add storage. Very Fast. **$797**

Mac Portable 40Mb

- 40Mb Hard Drive
- 1Mb RAM
- 12 hour battery life

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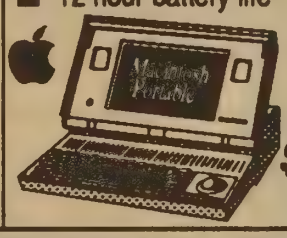

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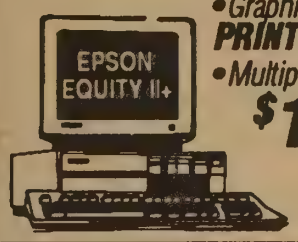

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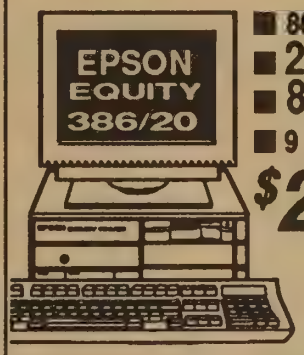

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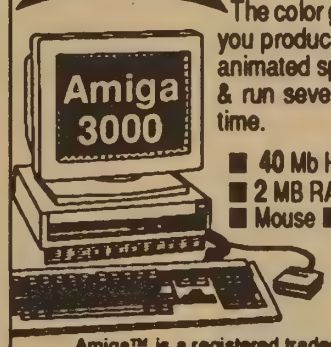
COMMODORE AMIGA Amiga 3000



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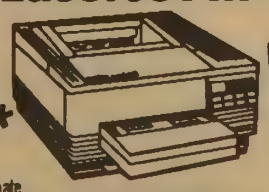

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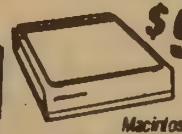

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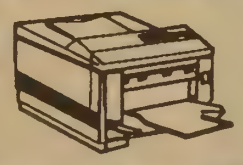

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- **Mainframe Publishing:** P.C. McGraw, GenText
- **Getting the Pictures Right in PostScript:** Peter Fink, The LaserLetter
- **Distribution & Channels:** Joanna Tamer, S.O.S.
- **IBM Font Architecture Strategy:** Dana Prestigiacomo, IBM

FRIDAY, OCTOBER 5

Vendor Tutorials

Working with Digital Creative Artists, Designers & Vendors: Michael Scaramozzino, DreamLight

PostScript User's Bull Session: Robert Coundouris, Lawrence Livermore Laboratory

Training: Bruce Kaplan, Mind Over Macintosh

High End Desktop Publishing-A Case Study: Susan MacCaul, The Publishing Access

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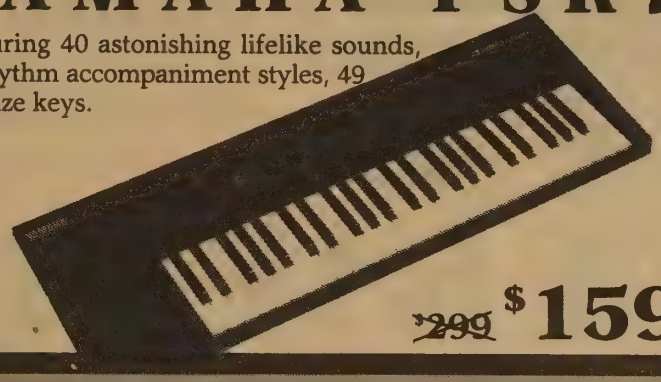

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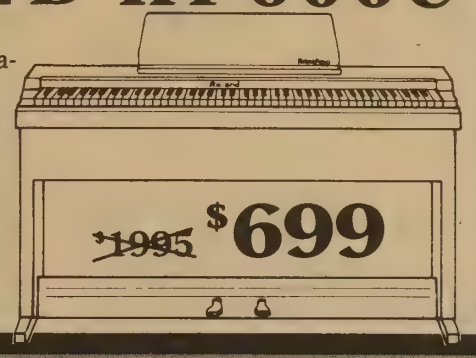
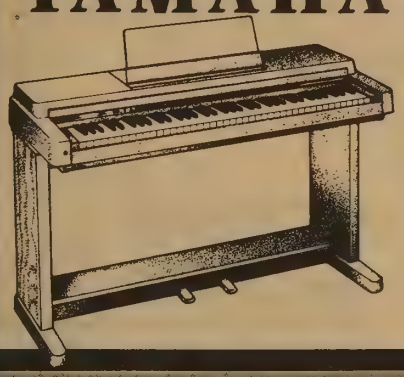


~~$1995~~ $699

YAMAHA CLP-200



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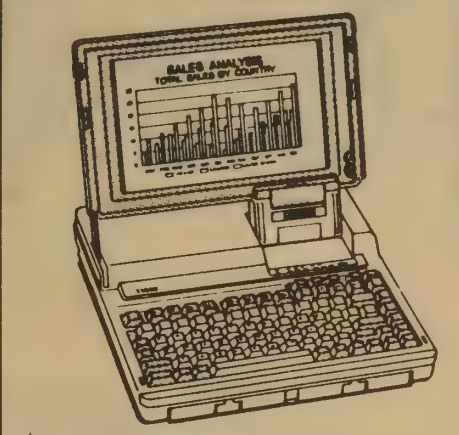

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PRODUCT SPOTLIGHT

New Products

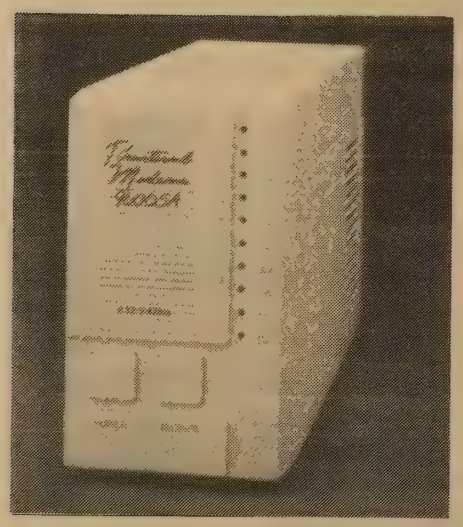
COMMUNICATIONS

SHARP MAKES 9600 BPS MODEMS AT 2400 BPS PRICES

Using its Extended Baud Rate (EBR) technology, Sharp now offers two revolutionary PC modems that deliver 9600 bps full-duplex performance for the price of a 2400 bps unit. Sharp's 9624 modem line includes the 9624 internal PC modem and the 9624e external modem. Both feature MNP5 Error Correction, and through EBR can run in a full-duplex, asynchronous data mode at 9600, 2400, 1200 and 300 bps. The modems are compatible with other dial-type modems, including V22A, Bell 212 and Bell 103. (The 9426 lists for $299, the 9624e for $399) Sharp Digital Information Products, Inc., 16841 Armstrong Ave., Irvine, CA 92714-4979. (714)261-6224.

STANDALONE 9600 MODEM FROM PRACTICAL PERIPHERALS

Practical Peripherals, based in Westlake, CA, has priced its new PM 9600 SA modem at only $699 retail. The PM 9600 SA features the latest error control technologies and supports both v.32 and v.42bis and MNP 5 error correction protocols for maximum flexibility in high performance applications. This includes automatic correct connection mode with remote, data compression of v.42bis and MNP 5, and data rates of 75 to 38,400 bps. It is compatible with all current domestic and most international modem types, including Hayes Ultra Smartmodem 9600 and Smartcom III. All Practical Peripherals modems come with a five-year warranty. Practical Peripherals, Inc., 15760 Ventura Blvd., Suite 1020, Encino, CA 91436. (818)990-1235.



INTEL PCEO PLUG & PLAY 9600BPS MODEM

Intel Corporation's Personal Computer Enhancement Operation (PCEO) continues setting new price/performance standards. The 9600EX offers error-free throughput of up to 3804K bps, conforms to international modem standards and plug and play installation. This is an external, full-duplex modem for systems with asynchronous

PRODUCT UPDATES

➤ **DEST, Inc.** has released the first upgrade of its optical character recognition (OCR) software, **Recognize! for the PC v.2.0.** Recognize! for the PC can now be used with scanners from other manufacturers, in addition to new features and increased speed. The upgrade for current users is $95. DEST, Inc., 1015 E. Brokaw Rd., San Jose, CA 95131. (408)436-2700.

➤ **Fremont Communications Co.** has rewritten the software shipped with its Frecom Fax95 board for the IBM PC and compatibles. The software, **Release 2.0**, is being shipped free to customers. Fremont Communications Co., 46309 Warm Springs Blvd., Fremont, CA 94539. (415)438-5000.

➤ **Fujitsu America, Inc.** has reduced the price for the **RX7100PS** family of PostScript personal page printers. Price reductions range between $800 and $1000, depending on the configuration and model. Fujitsu America, Inc., 3055 Orchard Dr., San Jose, CA 95134. (408)432-1300.

➤ **International Computer Group, Inc.** is now shipping **Perfect Menu v.2.3**, its menuing system for DOS LANs. International Computer Group, Inc., 18520 Office Park Dr., Gaithersburg, MD 20879. (301)670-7007.

➤ **OWL International, Inc.** now offers **Guide Reader 3.0**, a documentation display tool that enables organizations to cost-effectively distribute electronic documents. Guide Reader 3.0 is a companion to Guide 3.0, an interactive hypermedia development system. OWL International, Inc., 2800 156th Ave. S.E., Bellevue, WA, 98007. (206)747-3203.

➤ **Reference Software International, Inc.** is currently sending free upgrades, v.2.0, to owners of its grammar and spell checker **Grammatik Mac**. Reference Software International, Inc., 330 Townsend, Suite 123, San Francisco, CA 94107. (415)451-0222.

➤ **Silicon Beach Software** has begun shipping **SuperCard v.1.5** free upgrade to registered owners. Version 1.5 expands the power of the original version with such features as hierarchical and pop-up menus, list fields, color text and easier-to-use animation features. Silicon Beach Software, a subsidiary of Aldus Corp., 9770 Carroll Ctr. Rd., Ste. J, San Diego, CA 92126. (619)695-6956.

➤ **Waterloo Microsystems, Inc.** has released **Waterloo PORT 2.5**, a major upgrade to its LAN operating system. This new version contains new features, including significant enhancements to the user interface, a bundled email package, better performance and improved DOS compatibility. Waterloo Microsystems, Inc., 295 Phillip St., Waterloo, Ontario, Canada, N2L 3W8. (519)884-8590.

➤ **WordPerfect, Inc.**, in conjunction with Hewlett-Packard Co., has extended **WordPerfect** for Windows to support HP's **New Wave** technology. WordPerfect Corp., 1555 N. Technology Way, Orem, UT 84045. (801)225-5000.

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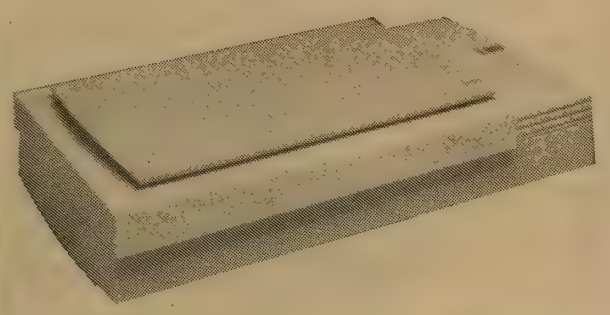

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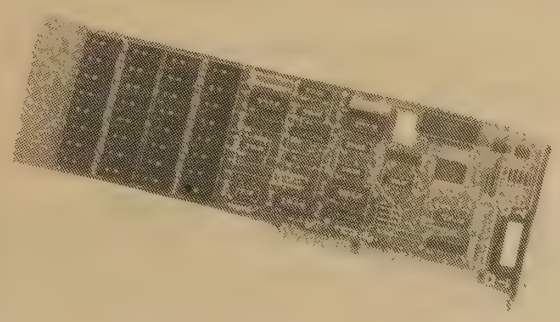

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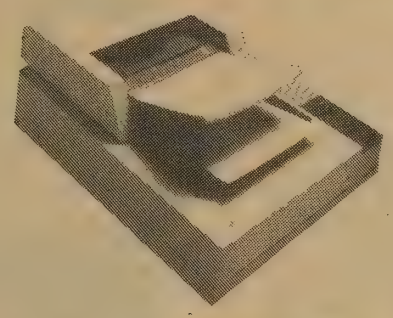

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AVR 3000CL	100 Sec.	Astral PP+	11x14"	$2395
HP Scanjet Plus	12 Sec.	Scan Gallery	8.5x11"	$2195
Microtek MSF300G	8 Sec.	Astral PP	11x14"	$2195
Microtek MSF300Z	100 Sec.	Astral PP+	11x14"	$2695

Grey Scale Printer Controller Comparison

Mfg. / Model	256 Grey Scale	Resolution	List Price
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Laser Master LX-6	Yes	800DPI	$2995

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Epson MX/FX 100, 286/LQ 1000, 1050	4.50	5.00
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NEC P2200	4.50	N/A
Okidata 82, 92/Gemini 10X, 15X	1.50	2.00
Panasonic KXP 1090, 1180, 1191, 1124	3.00	5.00/6.50
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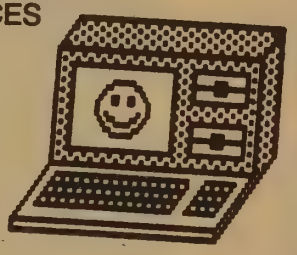

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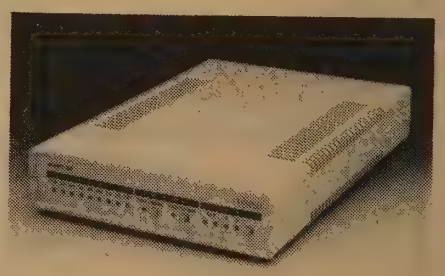
PRODUCT SPOTLIGHT

communications support, such as the IBM PC, XT, AT, PS/2 and compatibles. The 9600EX Macintosh option includes a Macintosh serial cable. The modems

can operate as synchronous or asynchronous devices over dial-up or two-wire leased lines, allowing communications with PCs, terminals, minicomputers and mainframes. ($799 for IBM PCs, $819 for Macintosh computers. Both versions include free communications software) Intel Corp., Personal Computer Enhancement Operation, CO3-7, 5200 N.E. Elam Young Pkwy., Hillsboro, OR 97124-6497. 1-800-538-3373.

FUJITSU DEXNET 200 FAX MODEM

The dexNET 200, from Fujitsu, is an external, RC232-C compatible fax modem that is plug-compatible with a variety of computer operating systems, including DOS and UNIX. Features on



the new 1.9 release include error detection on Fax Receive and easy-to-read fonts. The front panel of the dexNET 200 is designed to give the operator the ability to monitor and track each system function as it is happening. Push-buttons also allow the operator to select between voice and data, automatic answer or manual call origination, and fax or data communication. ($995.00) Fujitsu Imaging Systems of America, Inc., 3 Corp. Dr., Commerce Park, Danbury, CT 06810-9998. (203)796-5400.

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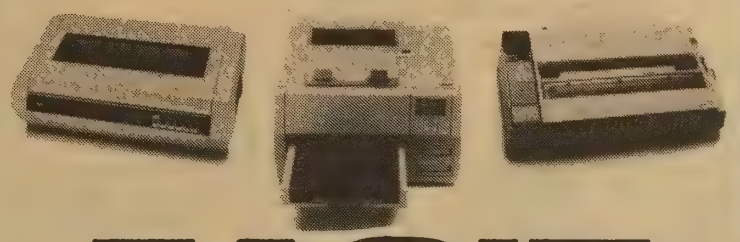

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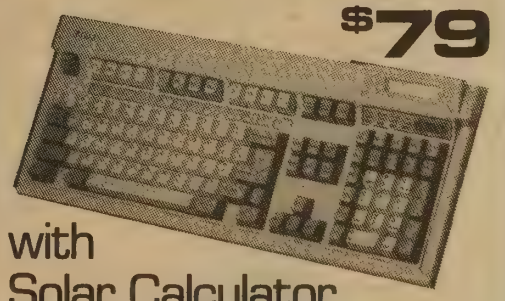

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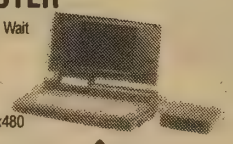
PRODUCT SPOTLIGHT

quency, 9600 bps modem, the DR 96. This small asynchronous, synchronous, half-duplex modem offers portable, high-speed wireless data transmission. The size of a walkie-talkie and weighing only 15.5 lbs., the DR 96 includes both the modem and radio in the same compact device. The DR 96 uses a rechargeable 7.5 volt battery pack that can operate the modem from four to ten hours depending on the transmit/receive ratio. It also comes with a separate recharger that has two recharging rates, quick and standard. ($1295) UDS, Motorola, Inc., 5000 Bradford Dr., Huntsville, AL 35805-1993. (205)430-8000.

continued

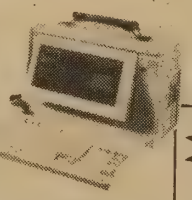
386 SX LAPTOP COMPUTER



- Intel 80386SX-16 8/16 MHz 0 Wait State Speed Up To 19.4 MHz
- 1 MB On Board
- 40 MB Hard Disk 28ms
- 1-3.5" 1.44 MB FDD
- 10" VGA/EGA/CGA/MGA 640x480 16 Grey Scale Gas Plasma
- 84+ Fn Enhanced Keyboard
- 2 Ser/1 Par Ports
- 90-270V. 110/220 auto-switch PS

$2495

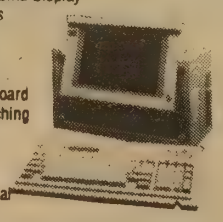
LCD Portable



- 640 x 200 or 640 x 400 Screen
- LCD Controller Card EGA, VGA
- Five Expansion Slots
- Two 5 1/4" Floppy Drive Space
- Auto Switch Power Supply 110 or 220 Power Outlet
- 86 Key Detachable Keyboard
- Soft Carrying Bag-optional

$680 CGA 11" **$850** EGA 11" **$950** VGA

Sprint
Gas Plasma Portable



- High Resolution Gas Plasma Display
- 640 x 400 Pixel Graphics Display CGA/VGA
- 80 Characters x 25 lines
- 9.25" x 6"
- Detachable 84-Key Keyboard
- 110/220 VAC Auto Switching
- RS-232 Serial Port
- Parallel Printer Port
- External Monitor Port
- Soft Carrying Bag optional

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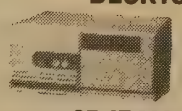

SE-AT-88319FD
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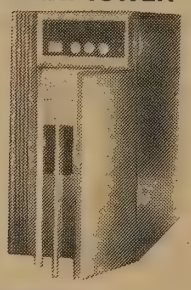
- 170x410x375 mm

SE-AT-678
- 2x5.25", 3x3.5"
- 330x405x 180 mm

MINI TOWER



SE-AT-23
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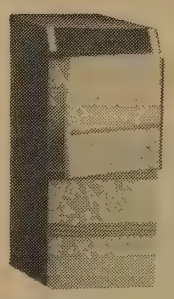
- 420x460x220 mm



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- 650x620x250 mm

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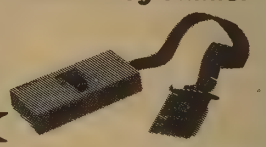

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- AT I/O (2 Ser , 1 P, 1G)
- Deluxe AT Case
- 230 Watts Power Supply
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- Landmark : *18MHZ*
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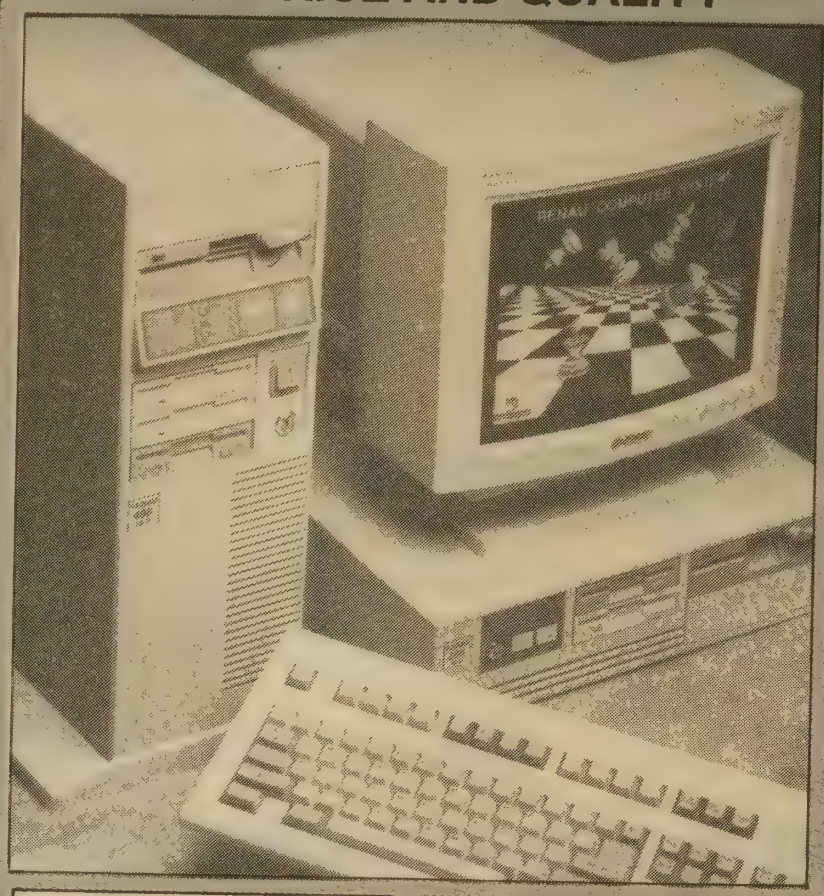

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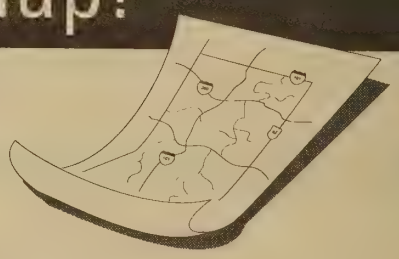
continued

Throw Away The Map!



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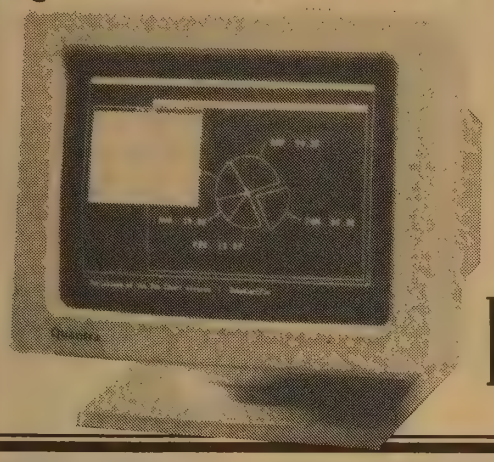
Q120 MONOCHROME



720 x 350

$51 GREEN $63 AMBER

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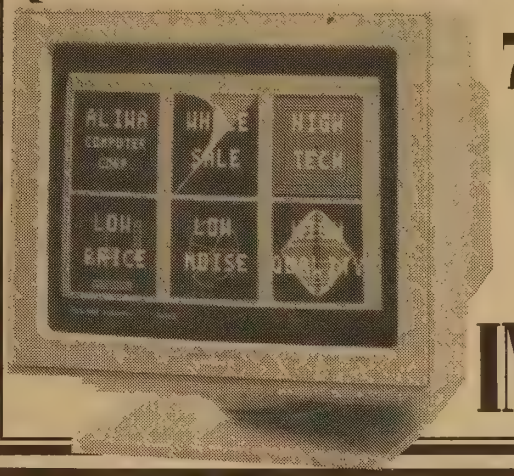
Q140 MONOCHROME



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IN STOCK

Q1420 VGA COLOR

720 x 350

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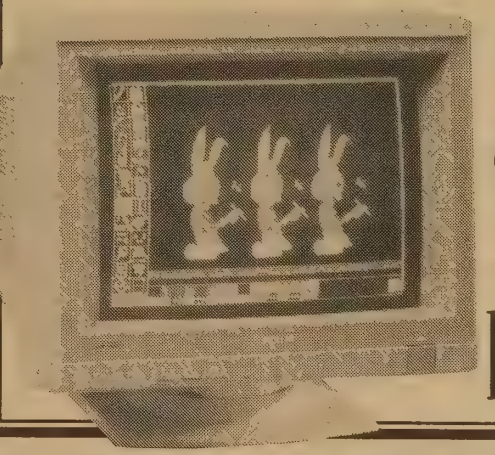
Q1460 SUPER VGA



1024 x 768

$295

IN STOCK

SPECIFICATIONS

MODEL	Q120 MONOCHROME	Q140 MONOCHROME	Q1420 VGA COLOR	Q1460 SUPER VGA
SCREEN	SIZE: 12" NONGLARE, TINTED	SIZE: 14" NONGLARE, TINTED FLAT SCREEN	SIZE: 14" NONGLARE, TINTED 0.31/0.39mm DOT PITCH	SIZE: 14" NONGLARE, TINTED 0.28/0.31mm DOT PITCH
INPUT SIGNAL	VIDEO: TTL	VIDEO: TTL	VIDEO: ANALOG	VIDEO: ANALOG
SCANNING FREQUENCY	H: 18.43 KHz V: 50Hz	H: 18.43 KHz V: 60Hz	H: 31.5 KHz V: 60Hz	H: 31.5, 35.1 & 36 KHz V: 50Hz-60Hz
RESOLUTION	720x350	720x350	640x480	640x480, 800x600 & 1024x768
BANDWIDTH	22 MHz	30 MHz	30 MHz	30 MHz
DISPLAY COLOR	AMBER	PAPERWHITE	UNLIMITED COLORS	UNLIMITED COLORS
POWER	115 VAC, 50/60 Hz	115 VAC, 50/60 Hz	115 VAC, 50/60 Hz	115 VAC, 50/60 Hz
CABINET	TILT w/SWIVEL BASE	TILT w/SWIVEL BASE	TILT w/SWIVEL BASE	TILT w/SWIVEL BASE
EXTERNAL CONTROLS	POWER ON/OFF BRIGHTNESS CONTRAST	POWER ON/OFF BRIGHTNESS CONTRAST	POWER ON/OFF BRIGHTNESS CONTRAST	POWER, BRIGHTNESS, CONTRAST, V-H HOLD, V-SIZE, H-PHASE
WEIGHT	17 LBS.	20 LBS.	33 LBS.	31 LBS.

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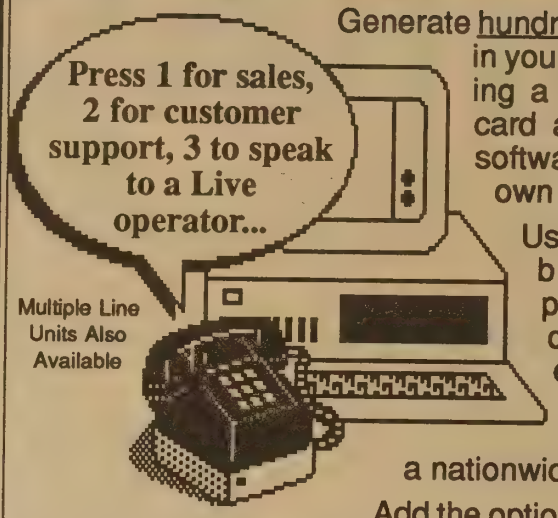

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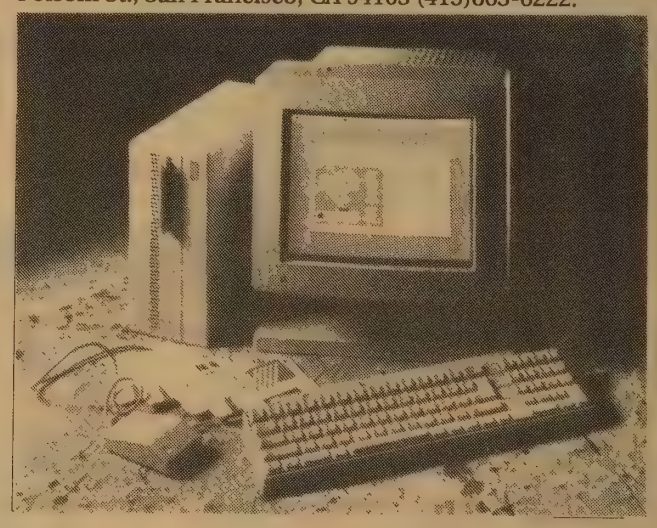
PRODUCT SPOTLIGHT

publishing and graphics. (RTPD $1,795; Macintosh interface $595; PC/AT interface $795) Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. (408)434-1010.

ON THE ROAD AGAIN WITH MY SE

Users of a Macintosh SE or SE/30 can now convert their system into a modular format using MACadam's ROAD E kit. The basic kit includes a 15" full-page monitor, a low-emission metal case with an SE-size footprint and a videocard. The optional NTSC driver permits connection to a television through the TV's RCA port. ROAD E can also work as a standalone portable hard disk when plugged into the SCSI port of any Mac. Clear instructions make the conversion quick and easy, taking only thirty to forty minutes. (Basic kit lists for $999; NTSC driver is $175; color display is $600) MACadam Computer Co., 1062 Folsom St., San Francisco, CA 94103 (415)863-6222.



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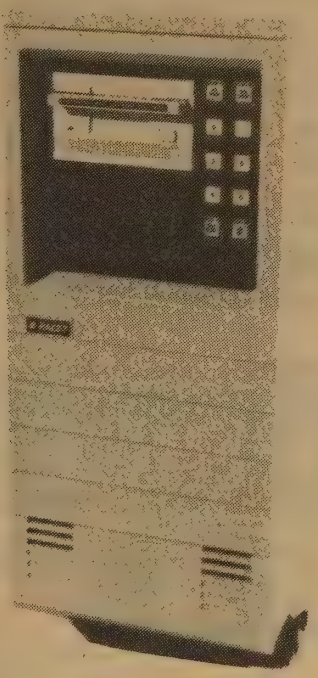
PRODUCT SPOTLIGHT

RACET UNVEILS FIRST MULTI-GB FILE SERVER FOR THE MAC

Racet's Mac-in-a-Box is the first LAN file server for Macintosh computers providing up to 15.7Gb of storage. This new system, one of the first peripheral products to incorporate a Macintosh motherboard, can also double as a high-performance CAD/CAE/CAM and desktop publishing workstation. Mac-in-a-Box can be connected to a variety of LAN operating systems for the Macintosh, including AppleShare/AppleTalk, A/UX and Sun Microsystems' TOPS. Racet provides a three-year warranty on parts and labor. (Price based on configuration) Racet Computers, Ltd., 3150 E. Birch St., Brea, CA 92621. (714)579-1725.



BOOKS

NEW UPDATED VERSION OF THE BOOK OF FAX

Daniel Fishman and Elliot King have outdone even their masterful first edition in this new book on buying and using facsimile machines. Right from the table of contents this edition is superbly organized and easy to follow, with a progression of fax operating explanations and user's and buyer's tips that make the book informative and an important reference. Both novice users and people interested in the latest fax developments will enjoy this book. New to this edition are sections on PC/Fax, Cellular/Fax and "A Look into the Future." The Index is a bit short, but the excellent Table of Contents more than makes up for this one weakness. ($9.95) Ventana Press.

continued on page 96

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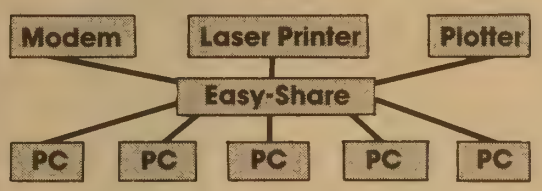

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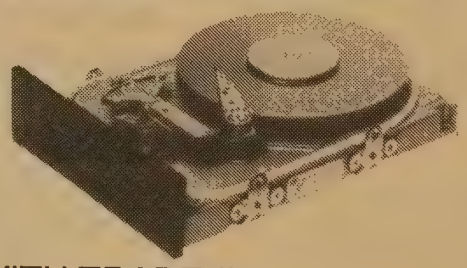

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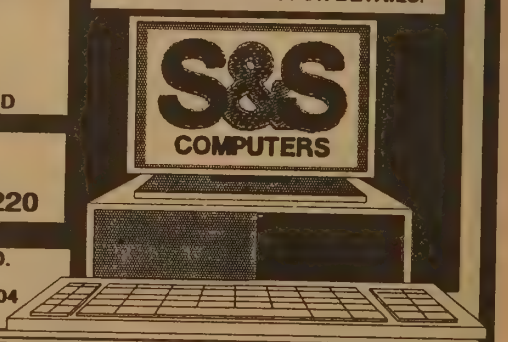

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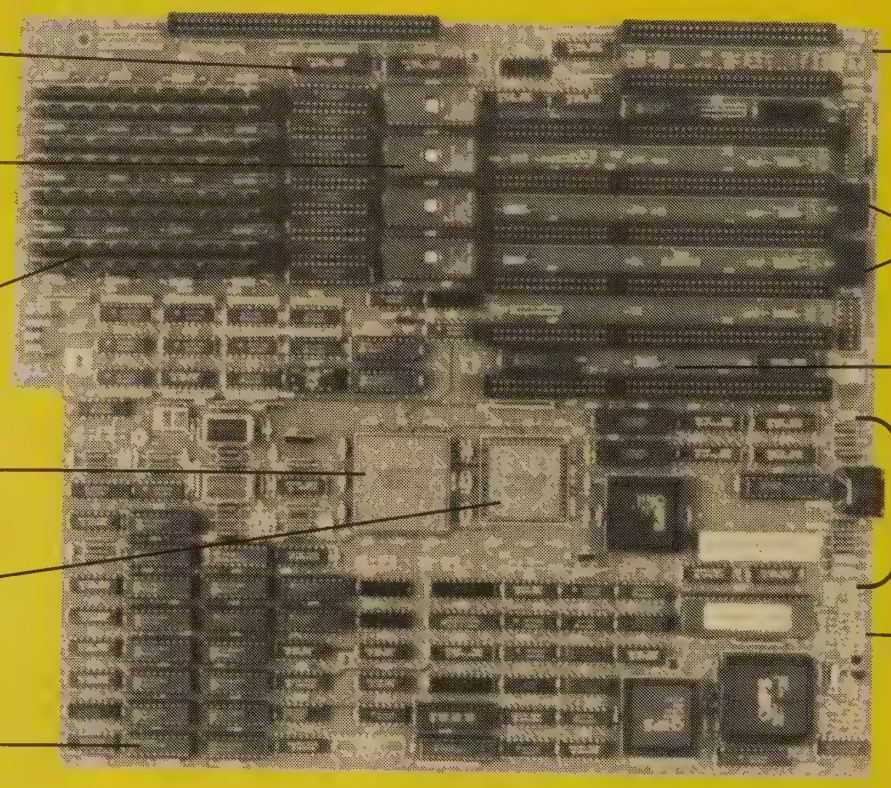

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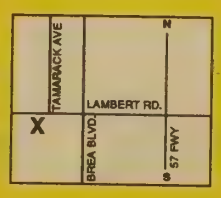

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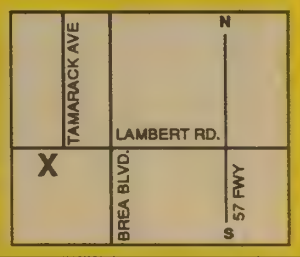

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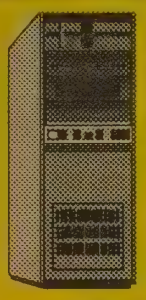

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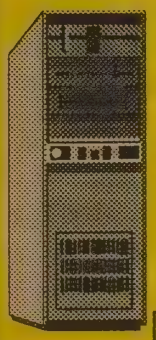

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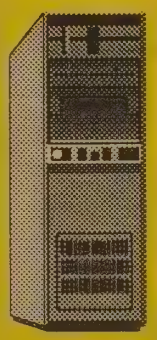

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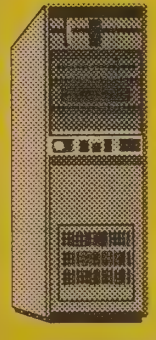
MICRONICS 386-33 ASIC or OMNITEL 386-33C



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2 SERIAL/1PARALLEL
HD/FD IDE CONTROLLER
1.2 OR 1.44MB FLOPPY

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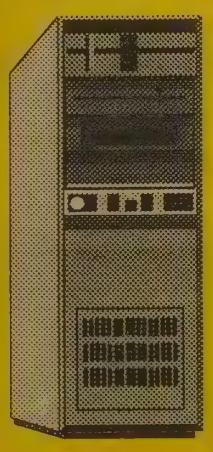
MONO	1990	2350	2550	2650
VGA	2290	2650	2850	2950
SVGA	2390	2650	2950	3050



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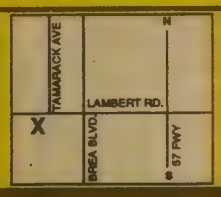

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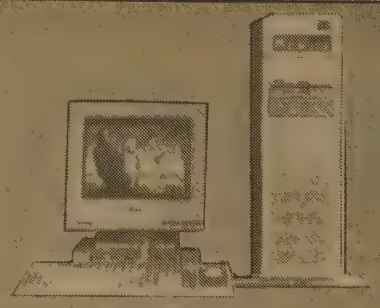

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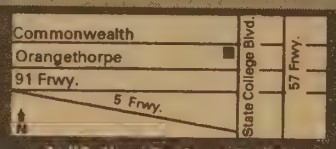

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PRODUCT SPOTLIGHT

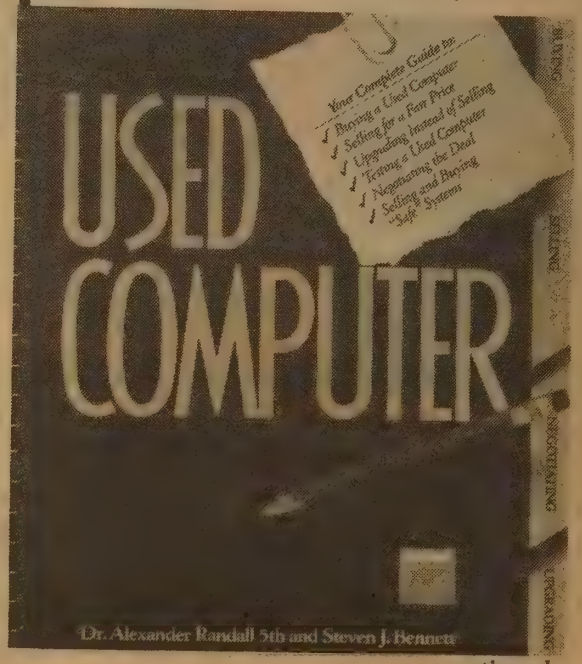
continued from page 91

GLOSSBRENNER'S COMPLETE HARD DISK HANDBOOK

This substantial book in the Dvorak/Osborne McGraw-Hill series should be the definitive reference guide for DOS-run computer owners who have or are buying a hard disk. The book not only covers hard disk basics, but also describes how and where to buy a hard disk, installation, formatting, DOS files for setting up and loading, DOS disk limitations, navigating your system with DOS, backup, DOS shells, menus and front ends, file recovery, disk troubleshooting and much, much more. Included in the list price is a disk containing shareware and free disk management software. ($39.95) Osborne McGraw-Hill.

ALEX RANDALL'S USED COMPUTER HANDBOOK

In their *Used Computer Handbook*, Alex Randall and Steven Bennett have written a much needed analysis of the



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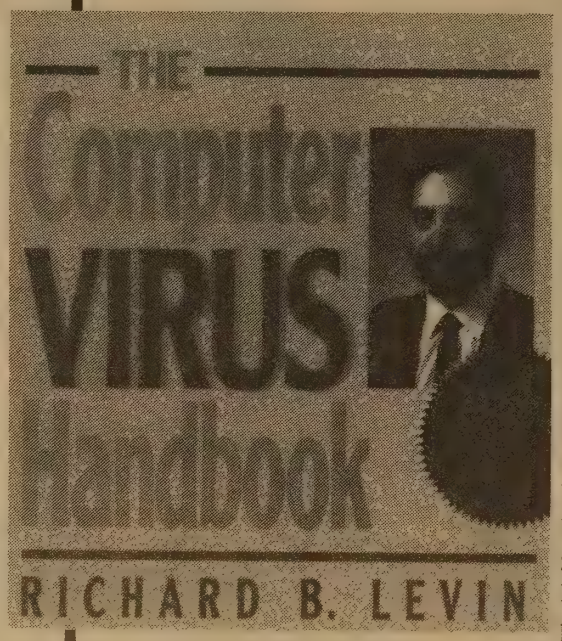
PRODUCT SPOTLIGHT

used computer market, for both buyers and sellers. They include an interesting curve showing five years of depreciation of a computer from the time you open the box. Also discussed are factors that can reverse this trend, such as a high demand for computers, proper installation and updates. There are sections on upgrading your PC vs. selling it, finding sellers and buyers through networks, and donating vs. selling your used computer. ($14.95) Microsoft Press.



THE COMPUTER VIRUS HANDBOOK SHEDS NEW LIGHT

Richard B. Levin's new book presents a very thorough analysis of types of rogue software and how to detect and prevent the spread of most DOS-infecting viruses. His section on implementing an effective antivirus policy is especially thorough, as is his short chapter on general hard disk management. He gives a general review, with pros and cons, of several popular virus cleanup, scanning and eradication programs, ending with a chapter on his own virus detection system, Checkup. Unfortunately, information on Macintosh viruses is limited to Appendix D. Included in the price of the book are several money-saving coupons for popular Antivirus Utilities. ($24.95) Osborne McGraw-Hill.

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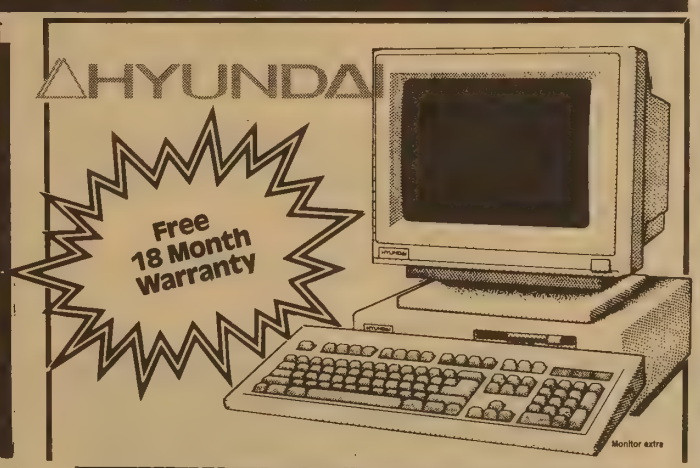

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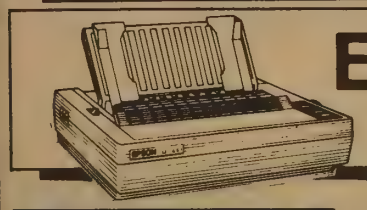

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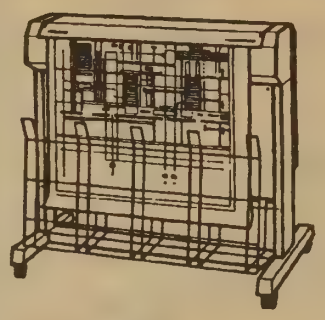

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PRODUCT SPOTLIGHT

GAME REVIEWS

By Mike Markowitz

FACES

Designed By: Alexei Pajitnov and Vladimir Pokhilko
Published By: Spectrum Holobyte
For: IBM PC (512K), VGA/MCGA, EGA, CGA, Tandy 1000, or Hercules graphics, Adlib, Tandy or SoundBlaster audio cards supported, joystick optional
List Price: $40

The third design from the Soviet creator of Tetris and Welltris, Faces is another exercise with falling blocks that must be maneuvered and dropped into place. This time, the blocks consist of chins, mouths, noses, eyes and foreheads that must be assembled into faces in the proper anatomical order. You can get points for a "mixed" face, but you are striving to complete "perfect" faces, with all the parts from the same personality.

The blocks fall in pairs, and you can tap the keypad to switch, flip or move them. When a face is completed, it moves from the playing area to the side of the screen. When a block lands on another in the wrong sequence it turns to "marble." When a stack of marble reaches the top of the screen the game is over. After a few games, I found Faces did not hold my interest as well as Pajitnov's previous creations.

One new feature, which I did not test out, requires a second computer and a second copy of the game. Using modems, or a null-modem cable, you can compete against another player—when you complete a perfect face, your blocked pieces are dumped onto your opponent's screen.

continued

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PRODUCT SPOTLIGHT

Each level of the game consists of a different gallery of personalities: Along with real people, like Napoleon, Lincoln, Dostoyevski, Mozart, Sitting Bull, Genghis Khan, and Vincent Van Gogh, you'll find Mona Lisa, the "American Gothic" couple, Count Dracula, Uncle Sam and the Easter Bunny. You can even create and (temporarily) load your own graphics using the LBM (Deluxe Paint) format. You have to leave one-pixel blank lines to separate the segments.

Showing real sensitivity to the differing needs of users, Spectrum has included three disk formats in the package: 360K, 1.2Mb and 3.5" 720K. Off-disk copy protection means you better not lose the manual.

Versions for the Macintosh and Amiga will be available later this year.

FLIGHT OF THE INTRUDER

Designed By: Rod Hyde

Programmed By: Chris Orton, Colin Bell, James Taylor, Dave Whiteside, Steve Parys and Paul Dunscombe

Published By: Spectrum Holobyte

For: IBM PC and compatibles (640K, 8MHz or faster CPU, Hercules, CGA, EGA or 16-color VGA graphics, joystick or mouse recommended, supports AdLib audio card)

List Price: $59.95

Hot properties rarely make good computer games, especially those that are Soon To Be A Major Motion Picture. After the lawyers and the literary agents have been paid, the lurid box-cover art commissioned, and the licensing fees negotiated, there is rarely enough time or money left for the programmers to do a decent job.

Flight of the Intruder is a pleasing exception.

The big package includes a paperback copy of Steven Coonts's Vietnam-era techno-macho fighter pilot revenge fantasy novel. You will also find a well-illustrated 160-page manual, a keyboard reference card and four 5.25" disks—one high density disk for the EGA/VGA version and three low-density disks for the CGA version, which is disappointing to any player who has ever seen good graphics.

Considerable effort went into making Flight of the Intruder a permissive environment for the beginning player. You can start out on autopilot, just going along for the ride, and gradually add levels of control as you gain confidence with the system. Nevertheless, the sheer variety of options and challenges can be overwhelming. Aircraft carrier landings are among the most difficult feats in flying, or in flight simulation. Spectrum Holobyte has many years of experience in programming exciting games that accurately reflect combat aircraft performance. Flight of the Intruder sets a new standard in the state of this art.

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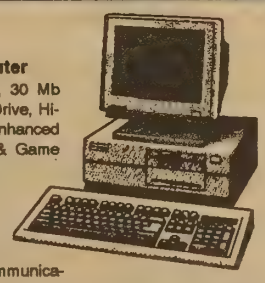

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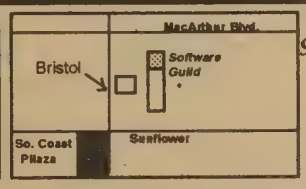

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Realizable Fantasies *continued from page 22*

and saves money wasted on unneeded packaging, to boot.

DARK FUTURES FOR CITIZENS: HIGH TECH AND BIG BROTHER

Most powerful technologies are double-edged—with potential for great good and great harm. Computing's no different. Our government agencies have some "fantasies" *they* want to "realize":

FBI monitoring political BBSes?: Over a year ago, the Computer Professionals for Social Responsibility filed a Freedom of Information Act (FOIA) request with the FBI. They wanted records on FBI surveillance of computer networks and bulletin board systems (BBSes) used by lawful political and citizen advocacy groups. Just like the civil rights '50s and antiwar '60s. After four additional letters, the FBI still hasn't been able to meet FOIA's legal requirements. Guess they need bigger computers.

Mandatory work ID cards: There is growing concern about undocumented workers and associated employer penalties. This is the official justification for urging mandatory work authorization personal ID cards for all citizens, perhaps related to Social Security numbers. Such cards would, just incidentally, aid access to personal information in numerous corporate and government databases, entirely unrelated to work eligibility.

Cellular surveillance: The FBI and the Defense Department's Advanced Research Projects Agency (DARPA) are now developing systems for monitoring cellular phone communications. Of course, we can be confident they will only be used to monitor nasty ol' Commies, Arab dictators and the Army's latest Menace—rural pot growers.

Secret systems; "Trust us!": As the FBI, DoD, NSA and CIA seek Congressional funding and authorization for these and other tools to monitor US citizens—*surprise!*—their designs and other potential uses are classified. Just like the Pentagon Papers. And—my *goodness!*—the systems proposed to Congress sound flawless!

Especially when presented by experienced bureaucrats backed by Beltway Bandits lobbying for funds, and evaluated by mostly-nontechnical Congresspeople and mostly-nonspecialist Congressional aides—with independent technical professionals prohibited from reviewing these secret citizen surveillance systems. Oppose it!—while you still can.

Most powerful technologies are double-edged—with potential for great good and great harm. Computing's no different. Our government agencies have some "fantasies" they want to "realize."

FOSTER FANTASY FLIGHTS

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Rd., Woodside CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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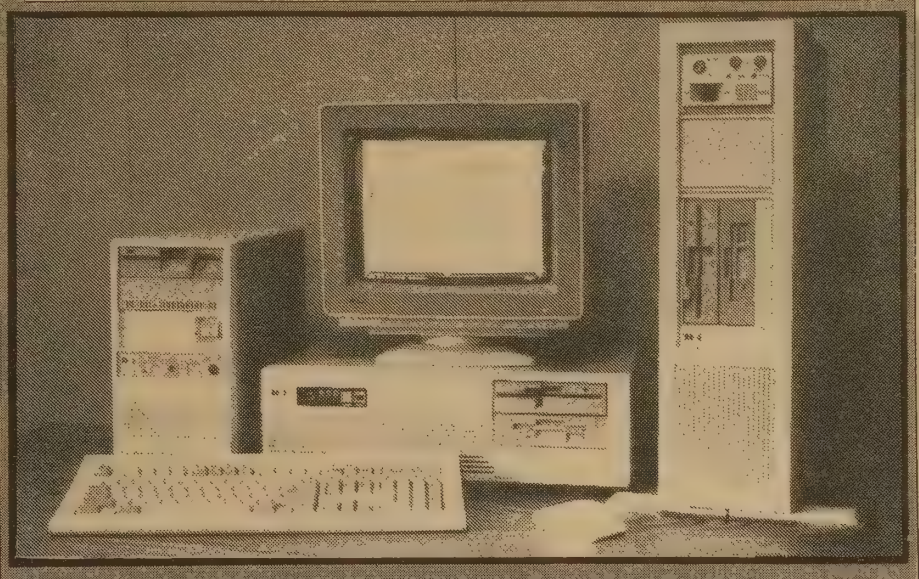

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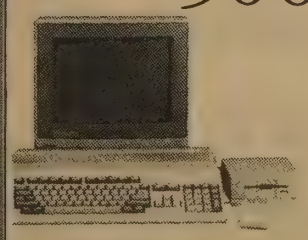

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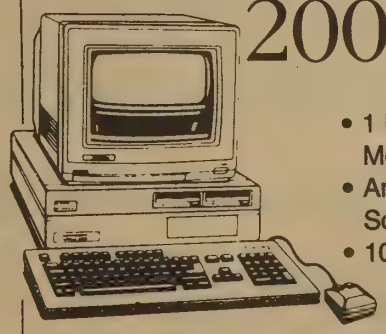

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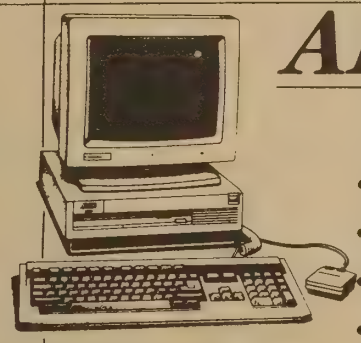

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Video Tools And Real World Issues

BY MATTHEW LEEDS

AMIGA

The Amiga's greatest success has been in graphics, specifically in that aspect of graphics that relates to video. The blessing (and curse) of its design makes it inexpensive to interface to video tape recorders, and it offers a very good price/performance ratio for professionals on a budget.

But it's not just professionals who are using the Amiga. At the same time that the Amiga has brought computer-generated graphics for video within reach of the consumer, innovations by the video industry have brought production-quality video hardware within reach of the non-professional. The results have sometimes been creative, quality productions; sometimes far short of that mark.

Just as when the Macintosh brought desktop publishing into the hands of the inexperienced, we've seen that access to tools does not guarantee expertise. While not every video needs the same production values as a feature film or even a television commercial, certain minimum standards should be applied to any work that expects acceptance in the business marketplace.

It's easy to get information on Amiga video products. Every Amiga magazine, and many video magazines as well, is constantly filled with articles touting the latest ray-tracing or titling package. Getting good solid information on lighting, composition, editing, sound—all the elements that make the difference between a stew of techniques and a gourmet presentation—that's a different matter. This month I'd like to pass on two resources that budding video producers might find useful.

Copyright © 1990. All rights reserved. *Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.*

LOWEL-LIGHT

Good video requires great lighting. Since video can't handle nearly the contrast ratio of film, getting a handle on the three critical components of lighting is essential. If you don't know what they are, if terms like gobo, scrim, kelvin temperature, and snoot sound like a foreign language, you should contact Lowel-Light to get their *Lightnews* newsletter.

Lowel makes lighting equipment for still, video, and film production. They've been doing so for a long time, and their stuff is rock solid. *Lightnews* is touted as an occasional, casual compendium of illuminating ideas, timely tips, pertinent propaganda and advice to the lightlorn. It's also a freebie with lots of very useful info on equipment, technique, concepts, and the art-and-craft of lighting.

STEADICAM JR

The second tip revolves around a new gadget called Steadicam JR from Cinema Products. Remember the scene in *Rocky* where the camera followed Stallone up the stairs? The forest chase scene in *Return of the Jedi*? The opening sequence in *Ghost*? They all were fluid, smooth takes that seemed to be done by a camera floating in space. They were done with the professional version of the Steadicam.

Steadicam is a camera mounting system that combines a camera operator's body vest with an articulated spring-loaded support arm. Counter-balanced to dampen all movement induced by the operator, a professional Steadicam system takes months to master, and costs around $40,000. The Steadicam JR runs $595, and you can be up and running with it in less than a day.

The complete system weighs about two pounds. Your camcorder is attached to a mounting stage. This stage can be adjusted on two axes to perfectly balance the system. A inter-gimballed handle is used to support and control the camera. A high-resolution 3 1/2"monochrome LCD monitor is attached to the front of the Steadicam for viewing, since the operator cannot use the camcorder's viewfinder. A fill light that attaches to the camcorder is also part of the system, as is a training tape and a power supply with batteries. The Steadicam JR can also be folded up and used as a shoulder support.

This version of the Steadicam will only work with camcorders that weigh under four pounds. In general this means that you'll use 8mm or VHS-C camcorders with it. If you

At the same time that the Amiga has brought computer-generated graphics for video within reach of the consumer, innovations by the video industry have brought production-quality video hardware within reach of the non-professional.

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VGA system & 68MB $1760
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- AMI BIOS
- Built-in ROM based setup
- 64 K CACHE memory
- Supports EMS/LIM 4.0
- 80387/3167 math socket
- Eight (8) expansion slots

Configuration

- 1 MB 0 wait state RAM
- One 1.2 MB floppy drive
- (1:1) HD/FD controller
- 2 serial & 1 parallel ports
- 1 game port
- Deluxe baby AT case
- 200 watts power supply
- Enhanced 101 keyboard
- Built-in clock & calendar

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VGA system & 68MB $1890
VGA system & 84MB $1970
VGA system &150MB $2450

386-33 64K Cache

- 33 Mhz system board
- Expandable to 16 MB
- AMI BIOS
- Built-in ROM based setup
- 64 K CACHE memory
- Supports EMS/LIM 4.0
- 80387/3167 math socket
- Eight (8) expansion slots

Configuration

- 1 MB 0 wait state RAM
- One 1.2 MB floppy drive
- (1:1) HD/FD controller
- 2 serial & 1 parallel ports
- 1 game port
- Deluxe baby AT case
- 200 watts power supply
- Enhanced 101 keyboard
- Built-in clock & calendar

$1370

VGA system & 68MB $2140
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VGA system & 330M $3360

286-12 MHz $470
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286-20 MHz $620

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486-25 4MB $3390

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- 2 serial/1 parallel/1 game
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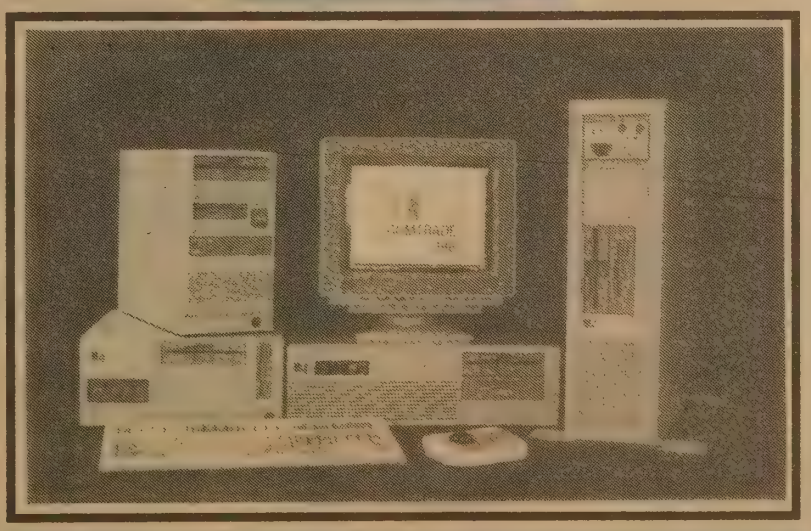

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3211 S. La Cienega Blvd.
Los Angeles, CA 90016

Showline Video
120 Beacon St.
Boston, MA 02116

own this type of camcorder, you've got to check out the Steadicam JR.

I've got a third tip to pass along. Although I haven't had a chance to review this hardware yet, Showline Video is about to release a new time base corrector that works with S-VHS and Hi-8. The projected list price is $1,295, less than half the current price of similar equipment.

REAL WORLD ISSUES

I rarely deal with political issues in this column. I figure that you get your daily dose from other media, and read this column for its Amiga-specific contents. Things from my perspective are getting out of hand however, and I'm going to take advantage of my soapbox for a few hundred words or so.

Let's start with something called Operation Sun Devil. This is a nationwide Secret Service operation in which several citizens found their computers, hard disks, floppies, printers, and anything else computer-like confiscated. In many cases, months later no charges have been filed and the equipment has not been returned. The media have described those raided as hackers, but this seems a thin rationale for the events that occurred. If you own a modem, you may end up on one of those "lists."

For those of you in California, you should know that your state legislature attempted to make it a misdemeanor to sell any computer game that included references to tobacco or alcohol products or packaging. This of course was for your protection. The bill is AB3280, proposed by Assemblywoman Sally Tanner. Through the efforts of several members of the computer game developers community, the bill was modified to only prohibit paid advertisements, and it is now awaiting Senate approval.

The ugly specter of censorship has appeared in many guises recently. From Jesse Helms's manipulations of the NEA to the seizure of Jock Sturgis's photography, the encroachment of government "protection" into our lives seems to be accelerating.

I'm not in favor of encouraging children (or adults) to use tobacco or to abuse alcohol. But I am very concerned by our government's attempts to "protect" us at the cost of limiting our choices. The First Amendment sits at the top of the Bill of Rights for a reason. We all need to be diligent about keeping it there. ■

While not every video needs the same production values as a feature film or even a television commercial, certain minimum standards should be applied to any work that expects acceptance in the business marketplace.

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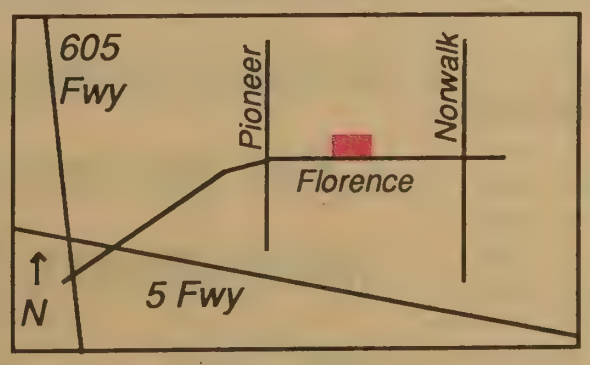

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Word Processing With Flair

Sophisticated Document Preparation With Wordflair

BY DAVID HAWKINS

ATARIST

There's almost an embarrassment of good word processors on the Atari ST. I could easily settle for using either WordUp or WordPerfect for everything.

Occasionally, though, a new product will show up that's so good I can't pass on it. Wordflair is one of those products. (Wordflair is available from Blue Chip International, Inc., 501 2nd St., Suite 414, San Francisco, CA, 94107. 415-243-9605.)

WHAT'S A DOCUMENT PROCESSOR?

Strictly speaking, it's more accurate to refer to Wordflair as a document processor than a word processor. If you're writing a six-hundred-page novel, Wordflair might not be your best bet. But if you want to put together forms, specialized letters, technical papers, or newsletters, Wordflair is ideal.

Wordflair lets you create documents that combine text, graphics, calculations, and data. It's different from most desktop publishing programs because you can use it to write the text in the document itself, instead of reading in prepared files.

REGIONAL WORK

Wordflair assembles a document by making different "regions" available. The Write Region is like having a window just for word processing. You can go to a Write Region and start typing, and later modify the text, change the font, or reformat the document. It's mainly an area where you can put in the text you want to deal with.

Calc Regions are areas in your document where you can have Wordflair perform calculations and show the results. If you were doing a newsletter that included budget information, you could put in the numbers and have Wordflair add up the numbers for you. Then if one of the numbers changed, you'd just change it in the document and have the program go through and do the rest of the changes.

GRAPHICS

Wordflair also has Graph Regions. You can read in graphic files and make them part of your document. Wordflair also has a way for you to draw in a Graph Region if you want to do a quick sketch as part of your presentation.

The Graph Regions also can be used to present graphs. Wordflair can take data and make a pie, bar, or line graph as part of the work. I was impressed at how easily Wordflair could take data displayed as a pie graph and convert it to a bar or line graph. This allows a certain amount of experimentation in what is going to look best. I like pie graphs, but there are times when they look out of place in the middle of a document.

MAKING MODIFICATIONS

Wordflair makes it easy to modify the document while you work on it. You can change the relative sizes of the different regions, as well as copy and move them. A region can become a "background" region and wrap around the others. For instance, you could have the text in the background fit around the sides and bottom of a graph or calculation. You could then change the size of the graph and the text would flow to fit the change.

It's easier to think of Wordflair as a desktop publishing program when making changes. You can create a grid and have the different regions line up with certain parts of the grid. A grid helps give a visual sense to the document, especially if you're trying to make it more eye-catching.

DID I MENTION THE DATABASE?

Yes, Wordflair has a database feature. You can create records that you can merge with the document. You could have a list of names and addresses that would be read into the document each time you printed it. Also, Wordflair would make changes in the document to adapt to the merged information.

BUY MORE RAM...

Wordflair's product information points out that it is good for short documents. If you're working on long, complex documents, you might run into memory problems. I have an Atari 1040 ST with only 1Mb of memory. If I had a Mega 2 or 4, it might have been a little more flexible. As it was, I often ran into limitations of how many files I could have open.

SUMMARY

I like my other word processors, but if I ever need to knock out a short and impressive paper, Wordflair's what I'll use. It has an excellent manual and good tutorials, and I was able to get a good grasp of the program quickly. ■

Copyright © 1990 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.*

If you want to put together forms, specialized letters, technical papers, or newsletters, Wordflair is ideal; it lets you create documents that combine text, graphics, calculations, and data.

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October 2–5 The X Window System: Fundamentals And Applications Development Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

October 4 Intro To LAN Course. Los Angeles. SERVTEL. Call: (213)955-9100.

October 4–12 Efficiency Beurs: International Trade Fair. Amsterdam. RAI Gebouw. Call: 020-549-12-12.

October 2–5 Hands-on Datacomm And Networks Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

October 5 NetWare 386 O.S. Features Review Course. Los Angeles. SERVTEL. Call: (213)955-9100.

October 6 Computer Marketplace Show. Pomona. Computer Marketplace. Call: 1-800-252-7927.

October 7 Computer Marketplace Show. Reseda. Computer Marketplace. Call: 1-800-252-7927.

October 7 Computer Show & Sale. San Diego. East-West Computer Shows. Call: (415)388-8893.

October 9–11 4th Annual Engineering Workstations Conference. Los Angeles. National Institute For Management Research. Call: (213)450-0500.

October 10–12 Imaging '90 Conference And Exposition. New York. BIS CAP International. Call: (617)982-9500.

October 10–12 Seventeenth International Information Management Expo & Conference. New York. CahnersExposition Group. Call: Marilyn Harrington, (203)352-8477.

October 13 Computer Show & Sale. Ventura. East-West Computer Shows. Call: (415)388-8893.

October 13 Computer Swap. CSU, Northridge. Computer Swap. Call: 1-800-433-7469.

October 13 Giant Computer Sale & Show. San Diego. Computer Simplex. Call: (617)741-9294.

October 14 Computer Marketplace Show. Buena Park. Computer Marketplace. Call: 1-800-252-7927.

October 15–17 14th Annual Data Entry Management Assoc. Conference & Expo. Los Vegas. DEMA. Call: 1-800-888-6485.

October 15–19 Neural Networks: Translating Theory To Real World Applications Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

October 16–19 Hands-on UNIX Systems And Applications Programming In C Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

October 17–19 NetWare 286 System Manager Course. Los Angeles. SERVTEL. Call: (213)955-9100.

October 18 Trainer's Association Of Southern California Meeting. Orange County. Trainer's Association. Call: Kitty LeSage, (714)540-6440.

October 18–19 Interactive Multimedia Seminar. Los Angeles. MacroMind. Call: (415)442-0200 ext. 225 or 222.

October 20 Computer Swap. Anaheim. Computer Swap. Call: 1-800-433-7469.

October 22–23 Knowledge-based Systems In Everyday Use: Increasing Productivity And Profits Seminar. San Diego. Decision Support Technology, Inc. Call: Donna Kacin, (617)354-6400.

October 22–24 Electronic Messaging '90: Beyond Interpersonal Correspondence Conference. San Francisco. Electronic Mail Association. Call: (703)522-7111.

October 22–24 NetWare 386 System Manager Course. Los Angeles. SERVTEL. Call: (213)955-9100.

October 23 The Basics Of Design Using Desktop Publishing Seminar. Riverside. Padgett Thompson. Call: 1-800-255-4141.

October 24 The Basics Of Design Using Desktop Publishing Seminar. Anaheim.

continued

COMPUTERS IN COMPETITION

IICS 1990 Mark Of Excellence Awards

The International Interactive Communications Society is accepting applications through November 15, 1990. Interactive videodisc projects that have been completed prior to June 30, 1990 are eligible. Interactive applications will be judged in seven categories: Training, Education, Informational, Merchandising, Health Care Sciences, Simulation and Consumer. For information and applications contact: Al Pitts, Special Projects Chairperson, American Technology Resources, PO Box 21, Media, PA 19063. (215)565-6434.

1990 Northern California STC Technical Publications Competition, The Art Of The Scribe

The Society For Technical Communications is accepting applications through September 16, 1990. Hard copy and diskette entries must contain substantial technical, scientific, medical, or procedural information, or information about a technical organization. They must be written in English and suitable for public display. The categories include: Software Manuals, Quick Reference Guides, Hardware Manuals, and On-line Help Systems and Documentation. For information contact: June Schaefer, STC Technical Publications Competition, 1075 Madison Ave., Livermore, CA 94588.

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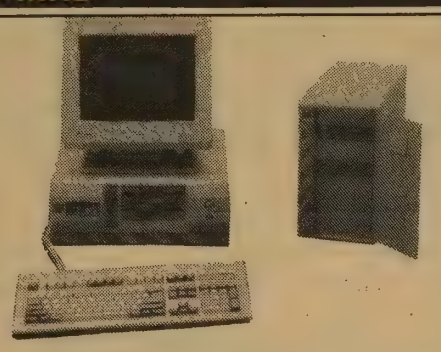
- 16 Bit 1:1 interleave FDD/HDD Controller
- Parallel & Serial Port
- Mono Hi-Res TTL Monitor
- Mono Graphic Card
- Enhanced AT 101 Key Keyboard



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- 101 Key Enhanced Keyboard (click)
- Mono Graphic Card
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- Mono TTL High Res Monitor w/Swivel Base
- 16 Bit 1:1 Interleave Floppy & Hard Drive Controller

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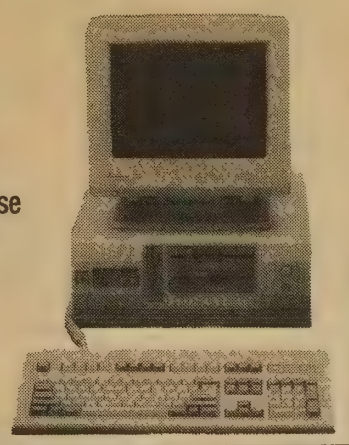

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40MB System	1045
65MB System	1125
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- Mono TTL Hi Res Monitor
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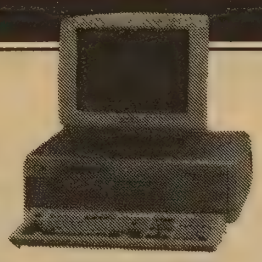
- Parallel/Serial/Clock/Calendar
- Mono graphic card
- Mono TTL Hi Res Monitor
- Enhanced 101 Key Keyboard



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40 MB Tape Back-Up	285
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Medium Tower Case	45
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Panasonic KXP 1624 Printer	370
Epson LQ510 Printer	280

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Calendar Of Events *continued*

Padgett Thompson. Call: 1-800-255-4141.

October 25 The Basics Of Design Using Desktop Publishing Seminar. Los Angeles. Padgett Thompson. Call: 1-800-255-4141.

October 27 Computer Marketplace Show. Pomona. Computer Marketplace. Call: 1-800-252-7927.

October 29–November 1 Applying Total Quality Management To Software Systems Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

October 30–November 2 Hands-on PC Configuration And Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

October 30–November 2 Software Requirements & Design Specifications Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

October 21–November 2 MacroMind Developer's Conference. San Francisco. MacroMind. Call: (415)442-0200 ext. 225 or 222.

October 31–November 2 UNIX Expo Show. New York. National Expositions Company. Call: Heidi Dethloff, (312)332-4650.

NOVEMBER

November 1–December 13 The Digital Musician: Tools For Making Music In The MIDI Era Course. Los Angeles. UCLA Extension. Call: (213)825-9064.

November 3 Computer Swap. CSU, Northridge. Computer Swap. Call: 1-800-433-7469.

November 4 Computer Swap. Glendale. Computer Swap. Call: 1-800-433-7469.

November 5–December 10 MIDI Sequencing Course. Los Angeles. UCLA Extension. Call: (213)825-9064.

November 6–9 Software Quality Assurance & Testing Course. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

November 6–December 11 The Cutting Edge—The Latest Technologies For Electronic Music Course. Los Angeles. UCLA Extension. Call: (213)825-9064.

November 7–December 12 Computers For Musicians: A Hardware And Software Overview Course. Los Angeles. UCLA Extension. Call: (213)825-9064.

November 10 Computer Marketplace Show. Long Beach. Computer Marketplace. Call: 1-800-252-7927.

November 11 Computer Marketplace Show. Buena Park. Computer Marketplace. Call: 1-800-252-7927.

November 12–14 NetWare 286 System Manager Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 12–16 The 4.3BSD UNIX Kernel: Intro And Networking Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

November 14–16 Information Engineering: Management & Implementation Seminar. Los Angeles. Technology Transfer Institute. Call: (213)394-8305.

November 15 Trainer's Association Of Southern California Meeting. Orange County. Trainer's Association. Call: Kitty LeSage, (714)540-6440.

November 15–16 NetWare 2.1 Update & Adv Features Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 17 Computer Marketplace Show. Pomona. Computer Marketplace. Call: 1-800-252-7927.

November 18 Computer Marketplace Show. Reseda. Computer Marketplace. Call: 1-800-252-7927.

November 19–21 Reseller Authorization Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 26–28 NetWare 386 System Manager Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 26–30 Applications Without Programming Using Alpha Four Seminar. Los Angeles. Alpha Software Corp. Call: (617)229-2924.

November 27–29 PC LANS: The Strategic View Seminar. Los Angeles. Technology Transfer Institute. Call: (213)394-8305.

November 27–30 Hands-on UNIX Systems And Applications Programming In C Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

November 29 NetWare 386 O.S. Features Review Course. Los Angeles. SERVTEL. Call: (213)955-9100.

November 29–30 Interactive Multimedia Seminar. Los Angeles. MacroMind. Call: (415)442-0200 ext. 225 or 222.

November 30 Intro To LAN Course. Los Angeles. SERVTEL. Call: (213)955-9100.

DECEMBER

December 3–7 Automatic Object Recognition Systems Class. Los Angeles. UCLA Extension. Call: (213)825-1047.

December 7–8 Interactive Multimedia Seminar. Los Angeles. MacroMind. Call: (415)442-0200 ext. 225 or 222.

December 9 Computer Marketplace Show. Buena Park. Computer Marketplace. Call: 1-800-252-7927.

December 15 Computer Marketplace Show. Pomona. Computer Marketplace. Call: 1-800-252-7927.

December 16 Computer Marketplace Show. Reseda. Computer Marketplace. Call: 1-800-252-7927. ■

OCTOBER 2–5

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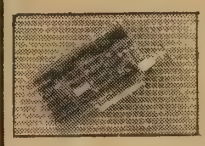

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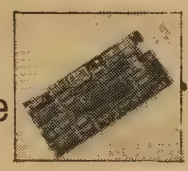
- NE-1000
- Compatible



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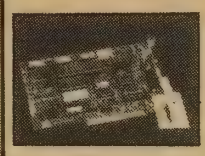
- NE-2000
- Compatible



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- Serial/Parallel/Game
- 12″ Amber Monitor
- 101 Keys Keyboard w/Cover

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16 MHz, NEAT 925
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Best & Worst #1. (213)864-2105. C64 & C128 specific. [Exp. #75.]

Best & Worst #2. (213)927-5016. C64 & C128 specific. [Exp. #75.]

California State University, Long Beach, CA BBS. (213)985-8737. 8-N-1, 300/1200/2400. Serving faculty, staff, students, alumni and community modem users. Sysop: Mark Bishop, [Exp. #76.]

Drug Abuse Information (DIAMP). (213)825-3736. 8-N-1, 24 hrs., 300/1200/2400. Drug information, statistics, bibliographies, forums, email, downloads, and uploads. Free membership, reg. requested. Sysop: Greg Cason. [Exp. #77.]

Hotel California BBS. (213)422-7693. 24 hrs., 300/1200/2400. Email, forums, IBM DL's, multi-user chat, adult interest files. [Exp. #76.]

KBBS Los Angeles. (213)558-0145. 8-N-1, 300/1200/2400/9600. Free group chat, 32 lines, 700Mb, 12,000 calls per week. Sysop: Dale Dude. [Exp. #75.]

LA Online. (213)372-4050. 8-N-1, 300/1200/2400. LA's largest online service. Local news, entertainment, info, thousands of classifieds. Free. [Exp. #76.]

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the orginal off off broadway bbs. (213)453-7038. 8-N-1, 24 hrs., 300/1200. Non-subscription, text files, messages only. [Exp. #76.]

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Cash Cow BBS (N. Orange County Computer Club). (714)962-1857. 24 hrs., 2400. 4th year of operation, specialize in business, Lotus, applications. Sysop: Vance L. Jochim. [Exp. #76.]

Computer Smarts BBS. (714)777-1416. 8-N-1, 1200/2400. Conferences include real estate, Clarion software, project mangt, Q&A, more. Sysop: Mark Burrell. [Exp. #76.]

DarkSword BBS. (818)339-4244. 24 hrs., 2400. Messages networked, email, games, and SIGs. Sysop: Raistlin Majere. [Exp. 76.]

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Tin Shack BBS. (818)992-3321. 24 hrs., 1200. The BBS for college students, faculty and new users. Sysop: Guy Nohrenberg. [Exp. #74.]

Tri-City Apple BBS. (818)288-6540. 8-N-1, 24 hrs., 300/1200/2400. Primarily Apple II, but others welcome. Email, PD, UL/DL, games. Sysop: Kris Holtzclaw. [Exp. #76.]

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LAAUG—Los Angeles Amiga Users Group. Meetings: 3rd Wed., 7:30 pm, Veteran's Memorial Auditorium, Overland Ave. & Culver Blvd. Many SIGs, Rookies, DTP, Video, Monthly PD disks. Call: Kip Hammond, (213)390-3010. [Exp. #76.]

South Bay Amiga Dudes/Dudetts. Meetings: 1st Thurs., 7:00 pm, Mercury Savings and Loan, 22939 Hawthorne Blvd., Torrance. Call: Mike Lehman, (213)370-6008 or Amiga Exchange BBS, (213)325-1796. [Exp. #79.]

South Orange Commodore Klub. Meetings: 3rd Sat., 9:00 am, Union Federal, 23688 El Toro Rd., El Toro. All Commodore and Amiga users. Call: Don, (714)830-2430. [Exp. #77.]

ATARI

Atari Computer Association Of Orange County. Meetings: 2nd Sun., 12:30 pm, Tustin Senior Citizen's Center. Call: Rick, (714)996-8509. [Exp. #75.]

NOCCC Atari SIG. Meetings: 1st Sun., Chapman College, Wilkinson Hall, rm. 221. (714)633-4665 or 552-5185. [Exp. #75.]

APPLE

Tri-City Apple User Group. Meetings: 3rd Thurs., 7:00 pm, Pasadena Central Library Aud., 285 E. Walnut St. Friendly Apple II experts, SIGs, info exchange, PD library, raffle, newsletter. Call: (213)258-0281. [Exp. #79.]

Valley Apple Computer Club. Meetings: 3rd Tues., 7:30 pm, Union Federal Savings and Loan, 7040 Sepulveda Blvd. Call: Dr. William H. Trent, (818)988-1752. [Exp. #75.]

CAD/CAM

Los Angeles Area AutoCAD User Group. Meetings: 4th Thurs., except Nov. & Dec., which is 3rd Thurs., 6:30 pm, Burbank Library, 110 Glenoaks Bl. Meetings feature tutorials, Q & A's, demos and newsletter. Call: M. Berman. (818)762-9966. [Exp. #78.]

CLARION SOFTWARE

Southern California Clarion Society. Meetings: 1st Tues, 7:00 pm, 1240 N. Lakeview #120, Anaheim. Call: (714)777-2130. [Exp. #79.]

COBOL

Micro Focus COBOL & Macola Developer/User Group. Meetings: 2nd Thurs., 7:00 pm, Torrance. Speakers, demos, tips and techniques. Call: Wilson Mar, (213)539-3050. [Exp. #76.]

COMMODORE

C128 West Commodore 128 User Group. Meetings in Covina and Santa Monica. Free membership, no dues. Call: (818)331-1589 or 892-3859. [Exp. #76.]

Commodore Technical Users Group Of Orange County—CTUG Of Orange County. Meetings: 4th Sun., 11:00 am, Murcery Savings And Loan, 1095 Irvine Blvd., Tustin. Call: Lou Palush, (714)532-1802. [Exp. #75.]

South Bay Commodore User Group. Meetings: 3rd Thurs., 7:00 pm, Mercury Savings and Loan, 22939 Hawthorne Blvd., Torrance. Call: (213)324-8357, or BBS (213)545-8653. [Exp. #77.]

DATAFLEX

DataFlex Professionals Guild. Meetings: 1st Sat., 8:30 am, Cinesound, 915 N. Highland, Hollywood. Call: Robert Ward, (213)382-4420. [Exp. #75.]

DBASE

The dBASE Language Professional Developers Group—DLaP. Meetings: 3rd Wed., 7:30 pm, Community Room of the Westside Pavilion. Call: Therese Padilla, (213)450-4399. [Exp. #75.]

UCLA PCUG dBASE SIG. Meetings: 3rd Wed., 7:30 pm, UCLA, Franz Hall rm. 1571. Call: Tom Rombouts (213)538-7108. [Exp. #75.]

Valley West dBASE Users Group. Meetings: 3rd Mon., 7:00 pm, Blue Cross of CA, 21555 Oxnard St., Woodland Hills. (818)988-6337. [Exp. #75.]

DESKTOP PUBLISHING

Southern California Ventrua Publisher User Group. Meetings: last Wed., 7:00 pm. (818)955-5830. [Exp. #75.]

Southern California Ventura Publisher User Group. (SC–VPUG). Meetings: 4th Thurs., 7:15 pm. Product demos, Q & A's, library resources. Call: (818)955-5830. [Exp. #78.]

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San Fernando Valley & Los Angeles Epson QX User Group. Meetings: 3rd Mon., 7:30 pm. Supports QX-10, QX-16, PX-8, Valdocs, CM/P. Call: Dave Goldman, (818)717-1768 or 341-7632. [Exp. #76.]

IBM & COMPATIBLES

Channel Island PC Users Group. Meetings: 2nd Sat., 9:30 am, Camarillo Community Center, 1605 Burley St. Meetings feature help sessions, speakers on hardware, software, shareware, library, SIGs newsletter. Call: Bob, (805)983-4741. [Exp. #77.]

Color America, Inc., MS-DOS SIG. Meetings: 3rd Thurs., 7:30 pm, Charter Oak High School, 1430 E. Covina Blvd., Rm. B7, Charter Oak. Call: Bob Marvin, (714)861-2949. [Exp. #76.]

Greater South Bay Users Group. Meetings: 2nd Wed., 7:30 pm, Fellowship Hall, rear of Christ The Lutheran Church, 2706 W. 182nd St., Torrance. SIGs, BBS, newsletter, library and more. Call: (213)542-4996. [Exp. #76.]

Long Beach IBM PC And Compatibles User Group. Meetings: 3rd Wed., 7:00 pm, Los Altos Methodist Church, 5950 E. Willow St/Woodruff Ave., Long Beach. Call: Jim Wells, (213)439-7114. [Exp. #76.]

North Orange County Computer Club (NOCCC). Meetings: 1st Sun., Chapman College. Thirty SIGs, including three on IBM, database, word processing, AI, investors, Lotus, OS/2 and graphics. Call: (714)998-8080. [Exp. #75.]

Orange Coast IBM-PC User Group. Meetings: Last Sat., 9:00 am, Orange Coast College, Costa Mesa. Call: Robin Clark, (714)843-2048. [Exp. #76.]

Orange County IBM-PC Users Group. Meetings: 2nd Tues., 7:00 pm, Computer Learning Center, 1240 S. State College Blvd., Anaheim. Call: Mike Lyons, (714)774-3236. Meetings feature guest speakers, sharing tips and problems, access to club library and newsletter. [Exp. #76.]

Pasadena IBM Users Group. Meetings: 3rd Wed., 6:30 pm, Caltech, Bridge bldg., rm 201. Call: Steve Bass, (818)795-2300. 3 hr. meetings have speakers on hardware and software topics including "tips and tricks," "stump the stars" and vendor demonstrations. Includes group library, newsletter, SIGs and BBS. [Exp. #76.]

South Orange County Computer Club (SOCCC). (714)554-1709. [Exp. #75.]

SWPC User Group. Meetings: 3rd Sat., mornings, various places. Call: Christine Tripp, (213)935-4105. [Exp. #76.]

System Users Network. Meetings: 4th Sun., 4–6 pm, Gardena YMCA, 1700 Redondo Beach Blvd. Call: Victor, (213)719–8659 or Burrell, (714)891-8843. [Exp. #77.]

Valley Computer Club. Meetings: 1st Wed., 7:00 pm, Burbank Board of Realtors Bldg., 2006 W. Magnolia. Guest speakers, info sharing, software library, newsletter, BBS. Call: (818)842-3707 or (213)221-4433. [Exp. #78.]

VICUG—DTP (Valley IBM/Compatibles User Group—Desktop Publishing). Meetings: 1st Fri., 7:30 pm, Union Federal Savings Bank, 13330 Ventura Blvd., Sherman Oaks. No membership fee. Call: Harry Tischler, (818)997-6000. [Exp. #79.]

VICUG—Valley IBM/Compatibles User Group. Meetings: 4th Fri., 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks. No membership fee. Call: Harry Tischler, (818)997-6000. [Exp. #79.]

KAYPRO

KAYOS Kapro User Group. Meetings: Last Mon. of even months, 6:30 pm, El Segundo. Call: Margot, (213)379-8339. [Exp. #76.]

The Lakewood/Long Beach KUG (Kaypro Computers). Meetings: 2nd Wed., 7:30 pm, Mid Cities Bank, 9025 E. Artesia, Bellflower. Call: Mark Motley, (213)928-9096. [Exp. #76.]

West Los Angeles Kapro User Group. Meetings: 3rd Tues. of odd months, 6:30 pm, Mar Vista. Call: Barry, (213)390-3851. [Exp. #76.]

K-MAN

Southern California K-Man User Group. Meetings: 2nd Wed., 7:00 pm, Laventhol & Horwath, 3699 Wilshire Blvd, 7th fl., Los Angeles. Call: (213)739-6494. [Exp. #78.]

LOTUS & BUSINESS

Lotus and Business SIG. Meetings: 1st Sun. (verify at 714/998-8080), 11:15 am, Chapman College, City of Orange, Hashinger Hall. Call: Vance Jochim, (714)962-2517. SIG of 1200-member N. Orange County Computer Club. [Exp. #79.]

MACINTOSH

Pomona Valley 99ers. Meetings: 2nd Mon., 7:00 pm, First Federal, 9900 Central Ave. Call: Bill Harms, (714)628-1334. [Exp. #74.]

San Gabriel Valley Mac Users Group. Meetings: 1st Thurs., 7:30 pm, 285 E. Walnut, Pasadena Central Library Auditorium. Call: Char Rice, (213)684-4266. [Exp. #76.]

SBAMUG—South Bay Apple Mac User Group. Meetings: last Wed., 7:30 pm, Pacific School, 1214 Pacific Ave., Manhattan Beach. (213)316-7738. [Exp. #75.]

Whittier Area Mac Users Group. Meetings: 2nd Sat., 10:00 am, 11818 S. La Mirada Blvd., Granada Heights, Friends Church, rm C-21. Call: Char Rice, (213)947-2447. [Exp. #76.]

SYSTEMS USERS

System Users Network (SUN). Meetings: 4th Sun., 4:00 pm, CSU, Dominguez, 1000 E. Victoria St., Carson. SIGs now forming. Call: Victor, (213)719-8659 or Burrell, (714)891-8843. [Exp. #79.]

TEXAS INSTRUMENTS

Los Angeles 99er Computer Group. Meetings: 4th Wed., Main conference room, City of Torrance Library. Call: E.A. May, (213)644-6241. [Exp. #79.]

Texas Instruments Professional Computer Users Group. Meetings: 4th Thurs., 55 Temescal Ter., San Francisco. Call: Thor, (415)386-5237 or Steve, (415)968-9543. [Exp. #75.]

TI-99/4A Computer Club. Meetings: 1st Thurs, 7:30 pm, Mercury S&L, 7813 Edinger Ave., Huntington Beach. Call: (714)750-6425. [Exp. #79.]

THEOS

THEOS User Group. Meetings: Call: Fred Bellemy, (805)965-0265. [Exp. #76.]

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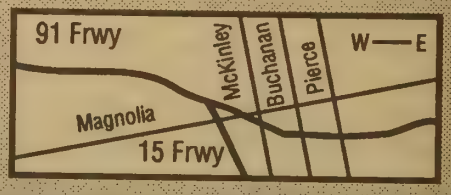

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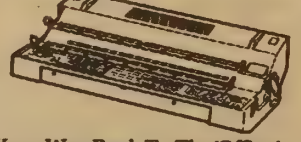

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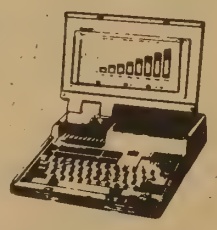
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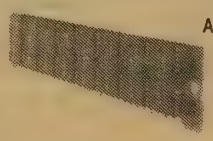
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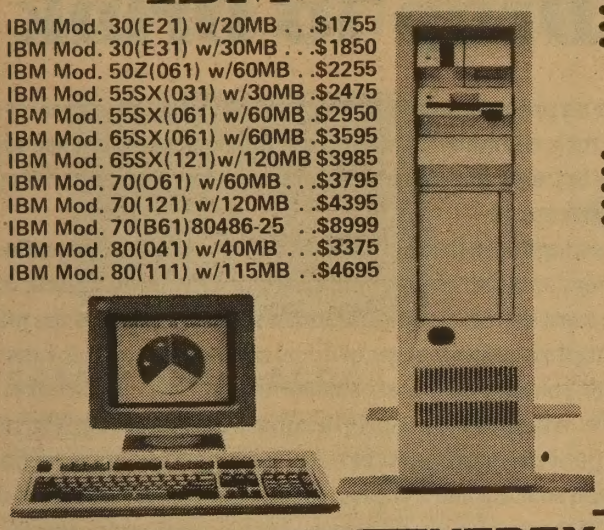

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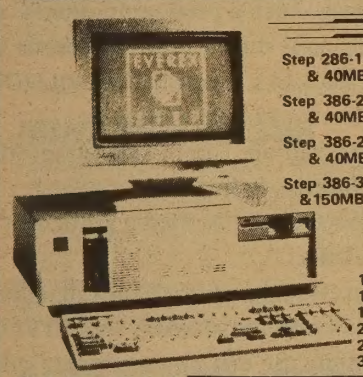

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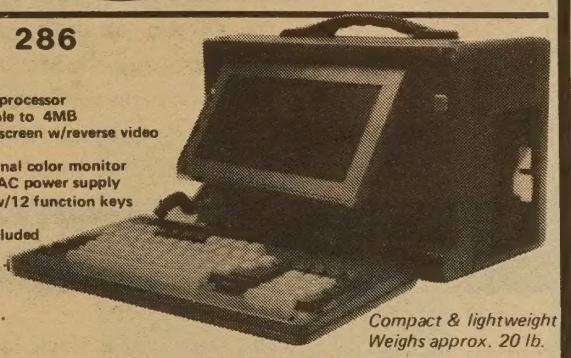

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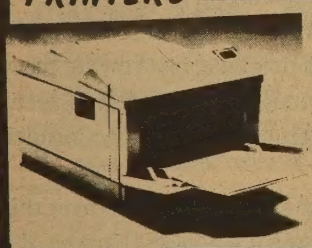

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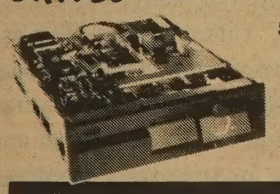

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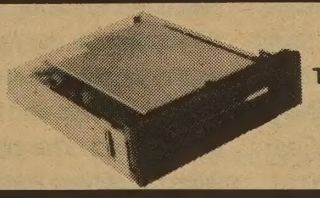

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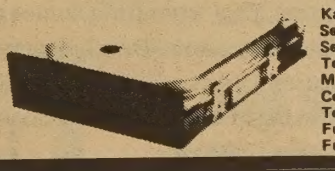

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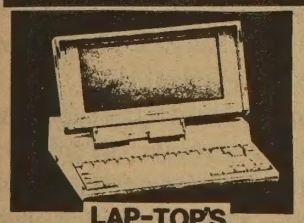

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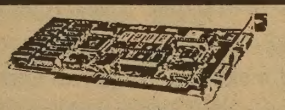

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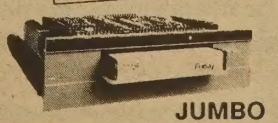

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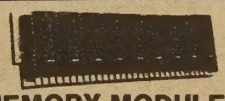

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Press Releases, Press Releases Everywhere But Not A Drop To Drink

BY JOHN C. DVORAK

Publicity drives the computer industry. It's almost sickening to get on a press release list. This isn't because once in a while you find out about some new product. I wish that more of the mail would be about fascinating new products. The ugly truth is that most press material is sent out to cater to the inflated egos of the owners of the companies paying someone to send out press material.

It was a light mail day in August when I did this column. Only a small pile of forty or so useless press releases. I'm going to go over this day's letters with you, and you can tell me if I'm wrong about the nature of the computer industry mail.

First off, there was nothing of substance in today's mail except my Diners Club bill, which I won't detail.

OK. On the top of the pile there is a huge envelope from the Waggener Group, the Microsoft mouthpiece in Portland. Inside is a press kit with a press release that has the following headline: "Microsoft Announces Broad OEM Support for OS/2 1.21; 30 Vendors to Ship by September 1990."

DVORAK'S LAST COLUMN

Oh, heart be still. Heck, I just pushed back in the lounge chair and popped open a Bud. Life doesn't get better than this. Front page news. Apparently Brenda Hansen at Microsoft and Claire Lematta at Waggener dreamed up this gem of an announcement. Congratulations for making my day with the good news! I didn't even bother to read this announcement, since I was so giddy I didn't know if I could hold the page steady.

So I went on to the next fine announcement. So what did I discover? Aha, a press release in a large envelope from Wolfram Research. Ooops, here's another one from Wolfram. Gads, another. AND another. Funny, they all look the same. Let's see what's inside.

Hmmm, it's a letter from someone named Jane O. Rich. A likely story. Its salutation is "Dear Journalist." How personal. There are two enclosures. One is a long diatribe about Mathematica; the other is announcing Mathematica availability on the Convex C Series Computer. Like I care.

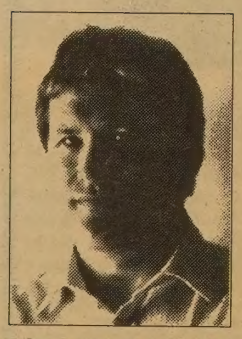
Let's see what's in these other envelopes. I open them to find that they are all the same. Curiously, they are all addressed to John C. Dvorak at the same address. The second line is different for each one, though. One says *MacUser*, one says *PC Computing*, one says *PC Magazine*, etc. I wonder if, as mathematicians, the people at Wolfram figure that sending me the exact same thing five times means I'll write about it five times.

You have to wonder. Do they think there are five different guys at the same address who have the same name but who all work for five different publications? Or can't they figure out how a merge/purge works? If they can't master merge/purge, then why should I trust their software for the Convex mini-Cray? It makes no sense.

So I read further into Jane's letter. She says that she has added many new names to the press list. Yeah, they're duplicates!

It's bad enough getting useless information in the mail, but who needs more than one copy? No wonder the country's productivity is going down the tubes. And it's not as though Jane O. Rich couldn't look over the mailing list. She's not sending out a million copies of this, is she?

So I chuck all this into the waste can, figuring poor Jane will get enough heat once this paper hits the stands. Onward.



John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

OK, here's a press release from ParcPlace Systems. Who dreamt up this name for a company? A Monopoly nut? This press release says, "ParcPlace Systems Announces Objectworks C++ Release 2." Hey, I never saw release 1!!

An interesting line in the press release says that this language allows programmers to build "robust" applications efficiently. I think that means the same as "bloated," but I'm not sure. I finally find the price after reading through four pages of drivel to discover that this runs on a Sun SPARCstation and it costs $3,000!!

Man alive. Where did these people come from? Mars? Oh, I'm sure a few old mini die-hards who like paying big bucks on somebody else's tab will soak up a few copies, but this kind of thing is from the dark ages. If these guys would release such a product for the PC at $49.95 and advertise it in *PC Magazine* they'd make hundreds of millions. Hey, guys, do you think Bill Gates is worth TWO BILLION DOLLARS because he sold compilers for $3,000?? Get real.

Besides that, why am I getting this crap-ola, I don't write about Sun software anyway. Check your mailing list, folks!

Are you starting to see why people think I'm such a grouch? It's these press releases that make me nuts.

Next one. Oh man, now I get a press release from Multisoft telling me that they're going to release a new product someday soon! It's not to be talked about until they send me the real press release! Gads! Boys, this kind of thing is what the phone is for.

Underneath that waste of time is a press release from the people who promote PC Expo. Sit down for this headline, lest you get dizzy from the possibilities for excitement: "Andersen Consulting Executive Keynotes PC Expo in Chicago, September 25-27, at McCormick Place North."

Let me catch my breath, as I'm about to hyperventilate over this news. Should I call Hearst and have him stop the presses? No wait, the best is yet to come. The topic of the speech. Get ready. It's entitled, "Workstation: the Application of the 90's." I start to swoon just as I realize that this makes no sense. Huh? Workstation, the application?

Let's back up and look this over (knowing I'm going to find something weird). The guy giving the talk is Hugh W. Ryan, Partner and Director of New Age Group and Enterprise for Andersen Consulting. New Age? New Age stuff is wacko, nutball stuff, isn't it? Out of body experiences, crystals, herbal colonics. Maybe everyone who goes will get an herbal colonic. It might be amusing to report on it.

I figure that he can't *really* be New Age. But, I read further and think that maybe this guy actually is a New Age advocate. His speech is about the "new age" of workstation use and he'll explore "key emerging technologies, including: multimedia, image processing, video and audio, expert systems, and universal reality approaches."

Give me a break! "Universal reality approaches?" Bang a gong, why don't you. I like the way these New Age guys sneak in the nutball stuff at the end. "Yes, I'll be discussing database management, spreadsheets, telecommunications and THE ALIENS AMONG US!!!"

It sounds like a speech to avoid, if you ask me.

So the pile isn't any smaller. The next press release is from Samna and it's headlined "AMI Professional Now Available for Hewlett-Packard NewWave 3.0." Gosh, let me make a note! The fifteen users of NewWave 3.0 should adore this free plug. (So should Samna, but I still don't care.) Under that is an announcement for the "LAN Primer," a book from M&T. And under that are twelve more of these things. Unfortunately, all these people use an expensive fibre-based paper that doesn't burn as well as it might. What a waste. ■

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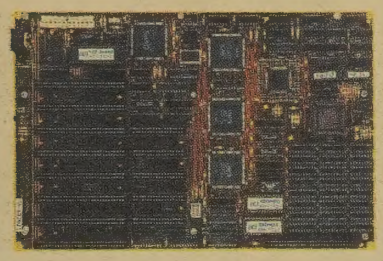

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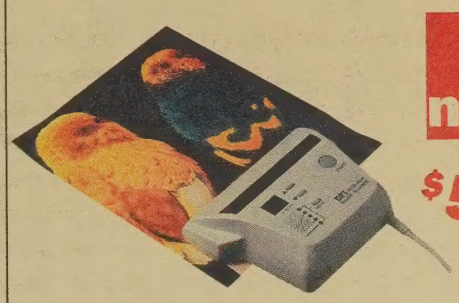

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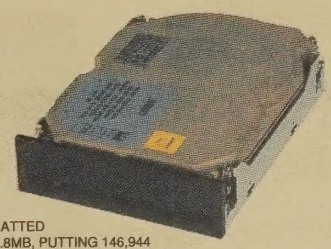

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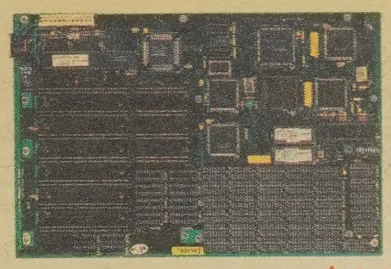

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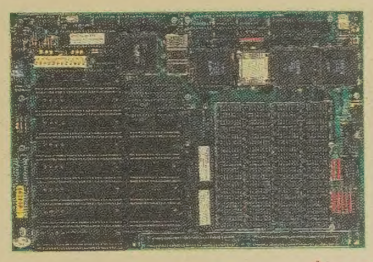

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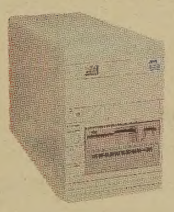

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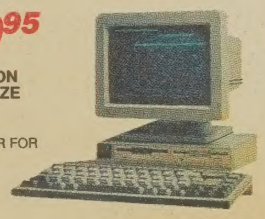

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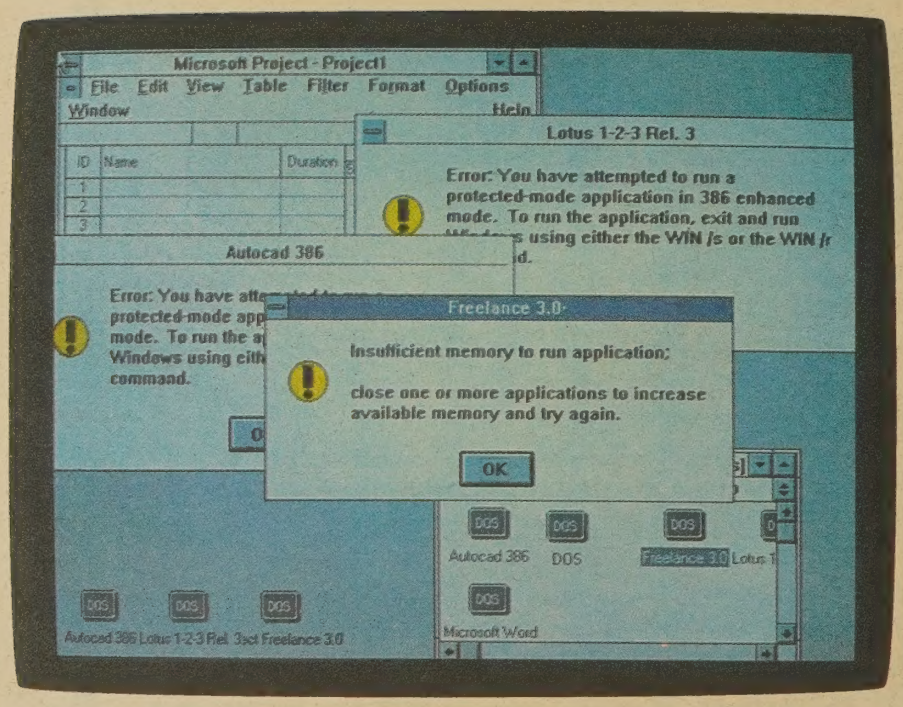
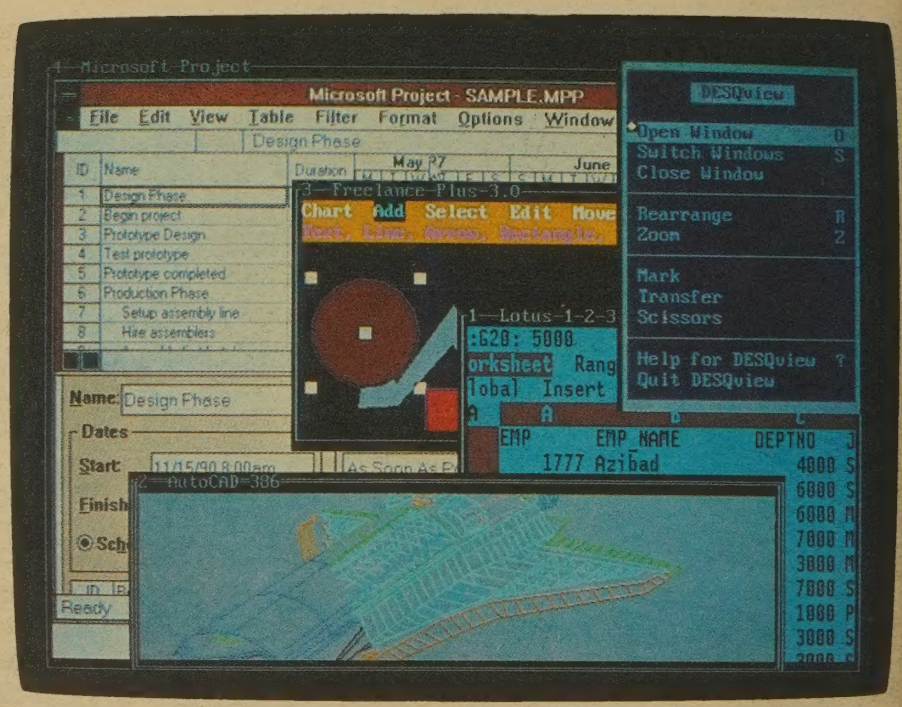

Microsoft Project - Project1
File Edit View Table Filter Format Options
Window
Lotus 1-2-3 Rel. 3
Error: You have attempted to run a protected-mode application in 386 enhanced mode. To run the application, exit and run
Autocad 386
Freelance 3.0
Insufficient memory to run application;
close one or more applications to increase available memory and try again.
OK
DOS
Microsoft Word

Windows 3.0. The multitasking, windowing environment.



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This comparison was made using a system like the one you might run: Both shots show an ALR FlexCache 33/386 running DOS 3.3 with VGA display adaptor, Novell NetWare v3.01 Rev. A, with IPX/SPX v3.01 Rev A, Microsoft Mouse 7.00, and Microsoft SMARTDrive v3.03 disk cache. Buffers were set to 20. For the Windows screen, we ran Microsoft Windows 3 HIMEM.SYS and EMM386.SYS. For the DESQview screen, we ran QEMM 386 v5.1.

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